

VOL. V.

OCT, 1852.

NO. 4.

THE PLOUGH

THE LOOM AND THE ANVIL.

F. G. SKINNER AND MYRON FINCH, EDITORS.

MOSES P. PARISH, ASSISTANT EDITOR.

DEVOTED TO SCIENTIFIC AND PRACTICAL AGRICULTURE—MANUFACTURES—
MECHANICS—NEW INVENTIONS—A SOUND PROTECTIVE POLICY—FARM
BUILDINGS—COTTAGE DESIGNS—FRUIT TREES—FLOWERS—GAR-
DENING—BEES, CATTLE, HORSES, HOGS, SHEEP, POULTRY, &c.

NEW-YORK:

PUBLISHED BY MYRON FINCH, 9 SPRUCE STREET.

PHILADELPHIA: R. C. THOMSON, 27 SOUTH SIXTH STREET.

For Prospectus, Terms, Postage, Contents, &c., see next Page of Cover.

The Plough, the Loom, and the Anvil.

EDITED BY F. G. SKINNER AND MYRON FINCH.

MOSES P. PARISH, Assistant Editor and General Agent.

The Plough, the Loom, and the Anvil, is issued MONTHLY, and contains SIXTY-FOUR PAGES of closely printed matter, richly embellished with appropriate engravings, and will hereafter be published at the following

GREATLY REDUCED RATES OF SUBSCRIPTION :

One Copy		one year payable in Advance,	\$3 00
Two Copies, \$2.50 each,		" " "	5 00
Five " 2.00 "		" " "	10 00
Seven " 1.70 "		" " "	12 00
Ten " 1.50 "		" " "	15 00

And to Clergymen of all Denominations, and Principals of Schools, and Teachers of Youth,
ONLY ONE DOLLAR A YEAR, IF PAID IN ADVANCE, WITHOUT EXPENSE TO THE PUBLISHER.

All letters should be post-paid, and addressed to

MYRON FINCH,

'OFFICE OF THE PLOUGH, THE LOOM, AND THE ANVIL, No. 9 Spruce St., New-York.

P O S T A G E .

THE PLOUGH, THE LOOM, AND THE ANVIL weighs THREE OUNCES, and to actual subscribers is chargeable at the following rates :

Any part of the United States, when paid quarterly or yearly in advance, only Six Cents per Year.

No Postmaster is authorized to charge higher than the above rates to actual Subscribers.

Mr. Samuel W. Brown is a duly authorized Agent for the Plough, the Loom, and the Anvil.

CONTENTS OF NO. IV.—VOL. V.

Letter to a Farmer of Ohio, by H. C. Carey, Esq., . . .	193	Agriculture in Germany,	241
Lime and its Compounds,	209	The Locust,	241
Cotton in Africa,	210	Letter of Gov. L. J. Farwell, on Flax Culture,	242
Prof. Salomon and his Carbon Engine, by J. B. Newman, M.D.,	211	Fixed Facts in Agriculture,	245
Who Pays the Duty?	219	Sewing Machine, (Wilson's Patent,)	246
How to make a Surplus of Food, and to increase it by Reciprocity,	220	The State Fair,	247
Efficacy of Cotton in Preserving Fruit,	221	Floriculture—Chicory,	248
Extracts from the Journal of a Tennessean,	222	How to Improve Poor Soil,	249
Topping Cotton,	223	Subsoiling,	251
Sexual Character of the Strawberry,	224	Horticultural—A Remedy for the Curculio,	252
The Laws of Hygiene, by J. B. Newman, M.D.,	225	New Books.—Up-Country Letters—Beautiful and new Music, published by William Hall & Son—Les Aventures de Telemaque—Bryan on the Human Ear—The Academy Vocalist—Glee Hive and Cantica Laudis—Meyer's Universum—Elements of Philosophy, by Bartlett. . . .	253
The North and the South,	228	OUR CORRESPONDENCE.—Practical Benevolence, . . .	254
Thoughts on the Culture of Cotton,	229	EDITORS' JOTTINGS.—New-York Horticultural Society's Exhibition—Madame Alboni—Madame Sontag—Chopped Tents in Cows—Southern Fairs—Succession of Wheat Crops in Oregon,	255
Sheep,	231		
To Extirpate Sorrel,	232		
English Agriculture, by Agricola,	233		
Remarks on Rearing Fowls,	235		
The New Postage Law,	238		
Adaptation of Crops to Market,	240		

INDEX TO ADVERTISEMENTS. NO. IV.—VOL. V.

Agricultural and General Book Store. John P. Jewett & Co., Boston.	1	Sale of Short-Horn Cattle, Troy, N. Y. Mr. Vall.	5
Massachusetts Horticultural Seed Store. Azell Bowditch, Boston.	1	Pilositous Compound. F. McCracken, New-York.	6
Piano Fortes. Safford & Brother, New-York.	1	Fruit Trees. Isaac Pullen, Hightstown, N. J.	6
Salamander Safes. C. J. Gayler.	1	Clothing Store. Henry L. Foster, New-York.	6
Philadelphia, Wilmington, and Baltimore R. R. H. H. Hud-dell, Agent.	1	Improved Melodeon. W. Hall & Son, New-York.	6
Hudson River R. R. George Stark, Supt.	2	N. Y. Life Insurance Company. Morris Franklin, President, New York.	7
New-York and Erie R. R. Charles Minot, Supt.	2	Manhattan Life Insurance Company. A. A. Alvord, Presi-dent, New-York.	7
Bay State R. R., Boston, via Newport and Fall River. Tis-dale & Borden, Agents, 71 West Street.	3	André Leroy, Nurseryman at Angers, France.	7
Camden and Amboy R. R. W. H. Gatzmer, Agent.	3	Designing and Engraving on Wood. A. H. Jocelyn, 64 John Street, New-York.	7
New-York and New-Haven R. R. Geo. W. Whistler, Supt. . .	3	Platform Scales. Fairbanks & Co., St. Johnsbury, Vt., and New-York.	8
New-York and Harlem R. R.	3	A. Saul & Co., Highland Nurseries, Newburgh, N. Y. . . .	8
Farmer's Bolders. Bartlett, Bent & Son, New-York. . . .	3	Fire-proof Paint. William Blake, New-York.	9
Scientific Books. Henry Carey Baird, Philadelphia. . . .	4	Ohio Fire-proof Paint. W. H. Starr, New-York.	9
Agricultural Warehouse. Ralph & Co., New-York. . . .	4	Patent Salamander Safes. Stearns & Marvin, New-York. . .	10
Improved Short-horn Cattle. Aaron Clement, Philadelphia. .	4	National Miniature Gallery. M. B. Brady, New-York. . . .	10
Cotton and Woollen Machinery. Andrews & Jessup, New-York.	5	Hugh Cameron, Agent for Sale of Publications, Washing-ton.	10
Designing and Engraving on Wood. J. F. Badeau, New-York	5		

The Plough, the Loom, and the Anvil.

VOL. V.

OCTOBER, 1852.

No. 4.

LETTER TO A FARMER OF OHIO.

DEAR SIR:—You ask me what are the prospects for the farmer. You are discouraged by the present low price of wheat, and desire to know if there is any remedy in prospect. If there is not, you are, as you say, disposed to sell your farm, and follow the example of your neighbours, in emigrating to California or Oregon.

That such should be your state of feeling does not surprise me. You are disappointed in your sanguine calculations as to the results which were to follow the adoption of the system known in Manchester and Birmingham by the name of free trade, and which looks to compelling the farmers and planters of the world to sell all their products in one market, and to buy all their cloth and their iron in that same market, kept by the men who teach this British free trade. Twenty years since, as I well recollect, you had a strong belief in the advantage that must result to the farmer from bringing the loom and the anvil to take their natural places by the side of the plough and the harrow; but then, as you will well recollect, protection to the American farmer and labourer constituted a part of the Democratic creed, while old-fashioned Federalism repudiated the idea that spindles and looms might be as advantageous to a nation as wagons and ships. It was then no heresy to believe with JEFFERSON that the time had arrived when we must place the manufacturer by the side of the agriculturist; nor with MADISON, that it was not only constitutional but expedient to protect the farmer and the planter in their efforts to draw around them consumers of their products; nor with JACKSON, that it was greatly to the interest of farmers and planters that a larger portion of our population should be enabled to devote themselves to the production of iron and of cloth, and a smaller one be required to give themselves to the production of food and raw materials, thus bringing the consumer to the side of the producer. You then thought with ADAM SMITH, that the natural place for the artisan was in the neighbourhood of the producer of the food and the wool; where both were cheap, and where he might have abundant supplies of food in exchange for the labour employed in converting the wool into cloth, and thus fitting it for cheap transportation to distant markets. In a piece of cloth, said Smith, there are many hundred-weights of food and wool; and a system which looked to compelling the farmer to export his products in their original forms he regarded as being "a manifest violation of the most sacred rights of mankind." So you too regarded it, and therefore it was that you so fully agreed with JACKSON that we had been "too long subject to the policy of British merchants," and that the day had arrived when we should convert our food and the other raw materials that so much abound, into commodities that could be cheaply carried to any market of the world, instead of permitting ourselves to be compelled to perform all our trade with the world through the medium of the looms and the shops of England. Since that day, however, "a change has come over the face of the dream" of many of our politicians, and Manchester

Strong as were your convictions that you and your brother farmers were to be benefited by protection, you were yet greatly dazzled by the idea of the total removal of restrictions on trade; and that you should have been so is not extraordinary, for there is certainly something pleasant in the idea of universal peace and universal freedom of intercourse. At length came the repeal of the English corn-laws, regarded universally as a boon to the food-producers of the world, who were to inundate the English market with their products, and to have higher prices the greater the quantity they sent. Our own exports of "breadstuffs and provisions" were, as Mr. Walker so confidently assured us, to rival in amount those of cotton, "great even as those were destined to be under a system of low duties" on foreign fabrics. Our high duties had, he told us, closed the markets of Europe against our food, and to such an extent that nothing short of a famine could open them; but now, by freely admitting the manufactures of England and of Europe, we were to be enabled to feed "the starving millions" of the eastern hemisphere, whose demands were to absorb the whole of the vast "surplus" for which we then needed a market; and the extent of that surplus was, we were assured, *no less than four hundred millions of bushels*. Absurd as such statements now appear, they were then put forth with the utmost gravity through the medium of Patent-Office Reports, which constituted, as we may suppose, the basis upon which rested the still more absurd calculations issued from the Treasury in relation to the foreign trade, in accordance with which our exports of food, cotton, tobacco, &c. were to increase at the rate of almost fifty per cent. per annum, as follows:—

In the present year they would be bound, agreeably to this estimate, to reach a thousand and fifty millions; almost one-half of which would consist of breadstuffs and provisions. How far those anticipations have been realized will be seen by an examination of the following figures exhibiting the export of food:—

Nor is this all. There is a portion of the world that we are bound, to a certain extent, to supply with food, and that trade has little, very little to do with the question of protection. For supplying Cuba and Brazil we have advantages resulting from proximity that enable us to compete advan-

teagously with all other parts of the world, and therefore it is that that trade continues so steady in amount as compared with that which we maintained with the "great grain-market of the world," in which we exchange raw products for manufactured ones, as is here shown:—

Year.	Breadstuffs and Provisions to Great Britain.	To rest of the world.
1847-48.....	\$19,538,000.....	\$18,186,000
1848-49.....	23,699,000.....	15,096,000
1849-50.....	12,271,000.....	14,100,000
1850-51.....	8,104,000.....	13,844,000

The trade with Great Britain is an artificial one, and therefore it is that it is subject to so great variation. The other is a natural one, and therefore it is that it is so steady.

The last year was one of remarkable failure in the crops of Central Europe, and famine prevailed there to an extent that was most deplorable, and yet "the starving millions" were quite unable to buy from us, as is shown in the following statement of exports for the first three quarters of the fiscal year 1851-52, in which are included all descriptions of food, the product of the grain-growing States, *sent to the Continent* :—

Beef.....	\$83,944	Indian corn.....	\$10,660
Butter and cheese.....	425	Rye-meal.....	1,100
Pork.....	11,605	Rye, oats, &c.....	11,908
Wheat.....	37,777	Potatoes.....	32
Flour.....	39,028	Apples.....	193
			<hr/>
			\$187,673

Recollect, I beg of you, that these are the total exports of food to France, which supplies us with millions upon millions of dollars' worth of silks and other articles that could be made at home by people who would consume home-grown food—that they include those to Belgium and Germany, who inundate us with foreign wool and food in the form of cloth—those to Russia, in whose favour we have almost destroyed the growth of hemp in the West—and those to Spain, in whose favour we have so far reduced the production of lead, that the total exports of the West *via* New Orleans have fallen from 800,000 pigs in 1846, to less than 300,000 in the year just closed—and then answer for yourself what are the causes of the decline of wheat of which you now complain. Is it not clear, that if we raised our own wool, and made our own cloth, and grew our own hemp, and mined our own lead, that our cloth-makers, and hemp-growers, and lead-miners would be consumers of food, instead of being producers of it? If our policy tended now to make them so, instead of tending, as it does, to drive our whole population into the raising of food, should we not thereby be carrying out the views you once so much admired when they came from the pen of General Jackson?

Compare this table, I pray you, with the magnificent promises of Mr. Walker—and then recollect that this is the demand upon us for the supply of the whole continent of Europe at a period of positive famine—after which determine for yourself what are the prospects of the farmer for future years, when crops shall be abundant. The truth is, that there is really no foreign market for our food worthy of notice, except that natural one which consists in supplying countries whose climate unfits them for growing wheat or corn. Russia and Germany, Spain and Portugal, France and Italy have food to sell; and it would be as judicious to look to Pittsburgh or Mauch Chunk for a market for coal, as to any country in Continental Europe for a market for our food;

and yet it is there that we find "the starving millions" that Mr. Walker was to feed with our vast "surplus." England is the only food-importing country of Europe to which we have any exports that can in the smallest degree affect prices; and you have seen how steadily and regularly the amount is declining, that of 1850-51 having been only *eight* millions of dollars, whereas that of 1848-49, long subsequent to the Irish famine, was about twenty-four millions. The first three quarters of the last fiscal year give about \$8,700,000, as the exports to her at a period of famine in some of the most important countries from which she has been accustomed to obtain supplies of food; and even this small amount of trade we should not have had but for the very low prices of wheat and of flour among ourselves during the past year.

The former is now selling in New York at about 90 cents a bushel, and the latter at about \$4 a barrel, and yet there is no export demand, nor can there be while American flour sells in England at from 18s. to 20s. (\$4.32 to \$4.86) a barrel; and there is far more chance for a fall than for any *permanent* rise in European prices. What the manufacturers of Birmingham and Manchester desire is *cheap food*, and to obtain it they have opened the markets of England to all the world at all times, the effect of which has been to reduce the price of wheat to 36s. or 40s. a quarter, or from 90 cents to \$1 per bushel of 60 lbs.; and now the landholders are everywhere exerting themselves to meet the reduction of prices by increasing their production, while the population is diminishing in actual quantity. Examine the *Times*, the *Economist*, the *Manchester Guardian*, or almost any of the free-trade papers, and you will find accounts of extraordinary improvements in the modes of cultivation, by means of thorough drainage and the application of the most fertilizing manures. What is sought to be accomplished is a reduction in the price of food; and the *Times* newspaper now assures its readers, that so great have been the improvements in the past five years, there need in future be but little anxiety felt in regard to the character of the seasons, the farmers of England having almost placed themselves out of the reach of danger from any such changes; and if this be the case, it is clear that you have but little to hope for in the future. The population of England has certainly ceased to increase, and as certainly she is rapidly improving her agriculture, so as to supply herself with food. Our population is increasing at the rate of a million a year, and we are driving the whole increase into agriculture, with a view to supply "the great food-market of the world;" and if this course of operation do not lead to a general and great reduction in the price of food, it will be one of the most remarkable facts of modern times.

One of the reasons for adopting the Manchester system of free trade was found in the fact that England had repealed her corn-laws, and yet that was precisely the reason why we should more pertinaciously have insisted on pursuing a policy tending to make a market on the land for the products of the land. So long as the admission of grain into England was only occasional, and prices varied greatly from one year to another, our farmers were in the position of the speculator who has control of the telegraph. We had fast ships on the ocean, and railroads at home, and were always ready to avail ourselves of the changes that might take place; while the people of the Continent, always slow in their movements, were not. Now, however, the market is always open, and there is a steady stream of food pouring into England, and the fast ship or nation and the slow one are on a dead level with each other—Russia having every advantage that is enjoyed by ourselves. The consequence of this has been, that while prices have risen in Germany, Poland,

and Russia, they have fallen here, and while *they* are daily acquiring means for the making of roads, *we* are forced to go abroad to borrow them. Every day tends to put them more and more on a level with us, and tends to render it more and more impossible that we should supply any part of Europe with food, *except at lower prices than we yet have seen*. Low as they have been in the last year, our whole export to England since the first of September last, now nearly 12 months, is but about nine millions of bushels, as follows: Flour, 1,323,553 barrels; wheat, 2,474,543 bushels; corn, 1,442,052 bushels; and yet it is for such a market as this that we have exchanged the domestic one so rapidly increasing under the tariff of 1842.

You will ask, "What is the remedy for a state of things so very ruinous to the farmer?" For an answer to this question, I would beg you to refer to the old-fashioned democracy of Jefferson, Madison, and Jackson, which taught, that if the farmer would prosper, he must bring the consumers to his side, and thus make a market on the land for its products. You will say, however, that our "surplus" is great, and that we *must* continue a food-exporting country; and yet it would require but a very little examination to satisfy you how great a fallacy is involved in such an assertion. The whole market of England has taken in the last year, almost one of famine in Germany, only nine millions of bushels; and if we estimate the average yield of labour at only 500 bushels of wheat or corn, the absorption by that market is equal to the product of 18,000 men. Now, in the last five years we have *driven* into agriculture at least a million of men, one-half of whom would have been better pleased to engage themselves in some other pursuit, as they would have done had our policy looked to the building of mills and furnaces, and the opening of mines instead of the closing of them. One hundred thousand men withdrawn from agriculture would have made a diminution in the number of producers far exceeding the number required for the production of our whole export of food to all parts of the world; and one hundred thousand added to the number of consumers would have made a demand fifty times greater than that which is furnished you by the whole people of the continent of Europe, who now furnish us with wool, hemp, lead, cloth, silks, and other commodities, to the annual extent of 50 millions of dollars.

Our export of farm produce to all the world does not amount to $1\frac{1}{2}$ per cent of the crop. Now, if we have already a market for $98\frac{1}{2}$ per cent., is it not clear, that if we adopted General Jackson's idea, and allowed a larger portion of our population to go into other pursuits, we could speedily make a market for the remaining one and a half per cent., first by diminishing the producers, and next by increasing the consumers and the power of consumption of all? Is it not clear even that we might readily make a market for food to such an extent as would make it profitable to import it from Canada for domestic consumption, and would not our domestic prices then be higher than those abroad by the whole cost of transportation? If you have any doubts of this, let me ask you to reflect on the following facts:—In 1842, we produced about 200,000 tons of iron, not a ton of which could be made into railroad iron, for we had no machinery for the purpose. In 1846, we made, as stated by Secretary Walker, 850,000 tons, seventy or eighty thousand tons of which were converted into railroad bars. Now, if we value this additional 650,000 tons, in its various forms of nails, axes, spikes, stoves, railroad bars, &c. &c., at an average of \$100 per ton, we have a value of sixty-five millions of dollars, to be given in exchange for food and clothing of the persons employed in building furnaces and mills, in opening mines and digging ore, in smelting the ore, and in the thousand operations required for bringing the iron into

the forms fitting it for consumption. Again, in 1842 we converted into cloth 265,000 bales of cotton, and five years after the quantity had almost doubled, while the domestic consumption of wool had risen from 55 to 80 millions of pounds, and the additional value given by labour to this additional cotton and wool may safely be placed at thirty millions of dollars, all of which went to pay for the food and clothing and house-room of the labourers employed in the various operations connected with the manufacture, from the building of the mill and the construction of the engine to the finishing of the cloth. In 1842 we mined 1,100,000 tons of coal, worth at market from four to five millions of dollars; but in 1847 it had risen to three millions of tons, worth at market 12 millions; and every dollar of this went, in one way or another, to the purchase of the fruits of the earth. Again, in 1842 the West sent to market 470,000 pigs of lead. In 1846 it had reached 800,000; and here we have an additional market for food to the extent of the value of these 330,000 pigs. In 1841-2 Kentucky sent to market 1,211 bales of hemp. In 1846-7 it had reached 60,000 bales. Now it is quite clear that the people who made this iron and cloth, and those who mined this coal, and mined and smelted this lead, and raised this hemp, would have been compelled to raise food for themselves and for sale, if they could not have employed themselves in mills and furnaces, mines and hemp-fields; and equally clear is it that they furnished a market greater than that which had existed in 1842 for the products of the earth, to the extent of at least one hundred millions of dollars, or four times more than we now export to all the world.

At the date of the passage of the tariff of 1842 we made little iron or cloth. Mills and furnaces were everywhere closed; the making of roads was suspended; banks, corporations, and States were bankrupt; and the general government was seeking in vain to obtain in London, Paris, or Amsterdam, *a loan of a few millions to defray our expenses in a period of profound peace.* We had closed the mills and the furnaces in the hope to obtain a market abroad, and the sort of market we did obtain may be seen from the following statement of our export of the products of the grain-growing States for 1841-2:—

Exports of	Quantity.	Value.
Beef and pork, tons	51,953	\$3,842,041
Butter and cheese, tons.....	2,250	388,185
Wheat, bushels.....	817,958	916,616
Flour, barrels.....	1,238,602	7,375,356
Corn, bushels.....	600,308	345,150
Corn-meal, barrels.....	209,199	617,817
Rye-meal, barrels.....	34,190	124,396
Horses, mules, biscuits, &c.....		954,474
		<hr/> \$14,565,037

Recollect, I pray you, that this was the market afforded *by all the world* for the food produced in the six New England States, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, Kentucky, Ohio, Indiana, Illinois, Michigan, and Missouri—eighteen in all; so that the foreign market, under a system of merely revenue duties, amounted to 800,000 dollars per State, or about seventy-five cents per head. Five years afterward, under the tariff of 1842, we had *created* a domestic market for food amounting to not less than one hundred millions of dollars, and yet we exported almost twice as much, as is here shown:—

Export of	1845-6.	
	Quantity.	Value.
Beef and pork, tons.....	71,500	\$6,358,092
Butter and cheese, tons.....	6,050	1,063,087
Wheat, bushels.....	1,613,795	1,681,975
Flour, barrels.....	2,289,476	11,668,669
Corn, bushels.....	1,826,068	1,186,663
Corn-meal, barrels.....	298,790	945,081
Rye-meal, barrels.....	38,530	138,110
Horses, mules, biscuit, &c.....		1,556,781
		<hr/> \$24,598,458

Recollect, if you please, that up to this date there had been no sign of potato-rot, no sign of Irish famine, and then remark that the export had increased seventy per cent., and this, too, under a system of protection that was, as we were told, to destroy our commerce with the world. In the face of *crops unexampled in the history of the country*, pork and beef had risen from \$74 to \$89 per ton: butter and cheese had trebled in quantity, and risen in price from \$172 to \$175; corn had risen from fifty-seven and a half to sixty-four cents, and corn-meal from \$3 to \$3.20; while wheat, which had almost doubled in quantity in this brief period, fell from \$1.12 to \$1.04; and flour from \$6 to \$5.09.

As yet, however, the country was but beginning to recover from the calamities of the period of 1841-2. It had required a long period to get into operation the old mills, furnaces, and mines, closed in 1842, and still more time was needed to bring about the state of things required to promote the building or opening of new ones; and if we desired to ascertain the real effect of the tariff of 1842, we should seek it in 1847, or even 1848, for up to this latter year the tariff of 1846 remained almost entirely inoperative.

Side by side with the last year of the tariff of 1842, I now place the last year of the tariff of 1846, under which the demand for food to "feed the hungry" of Europe was to rise to hundreds of millions of dollars, with great augmentation of prices:—

Export of	1845-6.		1850-51.	
	Quantity.	Value.	Quantity.	Value.
Beef and pork, tons.....	71,500	\$6,358,092	63,350	\$6,057,973
Butter and cheese, tons.....	6,050	1,063,087	9,627	1,124,652
Wheat, bushels.....	1,613,795	1,681,975	1,026,725	1,025,732
Flour, barrels.....	2,289,476	11,668,669	2,202,335	10,524,331
Corn, bushels.....	1,826,068	1,186,663	3,426,811	1,762,549
Corn-meal, barrels.....	298,790	945,081	203,622	622,886
Rye-meal, barrels.....	38,530	138,110	44,152	120,670
Horses, mules, biscuit, &c.....		1,556,781		728,396
		<hr/> \$24,598,458		<hr/> \$21,967,189

Beef and pork here have decreased in quantity, with a trivial increase of price; butter and cheese have increased *sixty* per cent. in quantity, while the total value has grown *six* per cent.; wheat has diminished in both quantity and price; flour has fallen off in quantity, and price has fallen to \$4.75. The yet more valuable articles of export have declined more than one-half; while corn—the corn *that should have been manufactured into pork*—has almost doubled, with large diminution of price; and this has happened under a system that was to give us a demand for food to the extent of hundreds of millions of dollars.

Recollect now, if you please, that from 1842 to 1847 we quadrupled our domestic production of iron, trebled that of coal, doubled that of cotton

cloth, and added at least one-half to that of woollen cloth, to say nothing of vast increase in the production of wool, hemp, lead, and the thousand other commodities that before we had imported, and then remark that although we had then made a domestic market amounting to more than a hundred millions of dollars, we exported in 1845-6 about twice as much food as we had done in 1841-2, when our mills and furnaces were closed. Next I would beg you to remark, that for the last four years we have built neither furnaces nor mills, but that we have closed hundreds of old ones; and that a large proportion of them has been sold out by the sheriff, a specimen of whose operations for the present year is given in the following paragraph, which meets my eye while engaged in writing this letter:—

FREE TRADE IN PENNSYLVANIA.—The Clarion County Register advertises seven columns of sheriff's sales again. Among the properties to be sold under the hammer will be nine iron-furnaces, with furnace property, making in all about twenty-three furnaces sold in that county by the sheriff within a year. The whole industry of Clarion county is affected by these disasters, as is shown by the fact that nearly all the rest of the property to be sold at this sheriff's sale which is advertised in the *Register* consists of grist-mills, saw-mills, and fulling and other mills.

We have reduced the production of iron to less than half a million of tons, and the consumption of cotton and of wool has greatly fallen off, while the lead received at New Orleans has fallen from 800,000 to 300,000 pigs, and the hemp from Kentucky has fallen from 60,000 to 19,000 bales; and thus have we diminished the amount of the domestic market for food at least fifty millions of dollars, while adding four or five millions to our population; and the foreign market, instead of growing, has largely diminished. Having studied these facts, you can, as I think, have little difficulty in determining for yourself the cause of the low price of wheat. Whenever we open a mine, or build a mill or a furnace, we add to the number of those who are only consumers of food, and every addition to the number of consumers tends to *raise* prices. Whenever we stop the building of mills, or furnaces, or close old ones, we compel men to become producers of food, and every addition to the number of producers tends to *reduce* prices. Here are plain, simple propositions, of the truth of which you are as competent to judge as I am, and if you deem them true, as I think you must, it would seem scarcely possible that you should fail to arrive to a correct understanding of the true causes of the difficulty of which you and other farmers complain.

It will be said, however, that the farmer should have the choice of markets, and not feel himself *compelled* to sell either at home or abroad. Undoubtedly he should, and *the object of protection is to secure to him that choice*. The British system looks to compelling all the farmers and planters of the world to bring their surplus produce to British ports, that it may be eaten by British workmen, and the people of Manchester and Birmingham have succeeded in accomplishing that object in reference to all the countries with which they have what they call free trade. Ireland has perfect freedom of trade, as it is called; she has, consequently, no consumers, and her farmers have no choice but to send every thing to *the one* market of England; whereas, if she made largely of iron and of cloth, her people would have two markets, the home and the foreign, and they could sell in the one or the other, as they might deem it most to their advantage. India has seen her manufactures pass gradually away as British free trade has obtained the control of her movements, and with each step in that direction she has become more and more dependent on the single market of England. So too with Portugal and Turkey, both of which have subjected themselves to Manchester free trade, which consists in allowing them but one market in which to sell, and one in which

to buy. The West Indies were not allowed even to refine their own sugar, lest they might have two markets in which to sell or to buy. So too with Canada and Nova Scotia; they have no home market, because, under British free trade, the consumer cannot take his place by the side of the producer. Wherever British free trade prevails the agriculturist has no choice of markets.

The near market is the great one, and the distant one is the small one. If you desire evidence that such is the case, I would beg you only to look to the fact, that the consumption of food among the domestic manufacturers of iron and cloth, and the domestic miners of lead and coal, and the domestic producers of machinery for mining and manufactures, increased in four or five years, under the tariff of 1842, more than a hundred millions of dollars, and would certainly, in the last five years, have increased as much more; whereas, under the tariff of 1846, it has diminished at least fifty millions of dollars, and yet the foreign market is scarcely greater in amount than it was twelve or twenty years since, as is here shown:—

The export of food, rice included, in 1830 was.....	\$17,538,227
in 1840.....	19,067,535
in 1846.....	27,701,121
in 1851.....	24,013,000

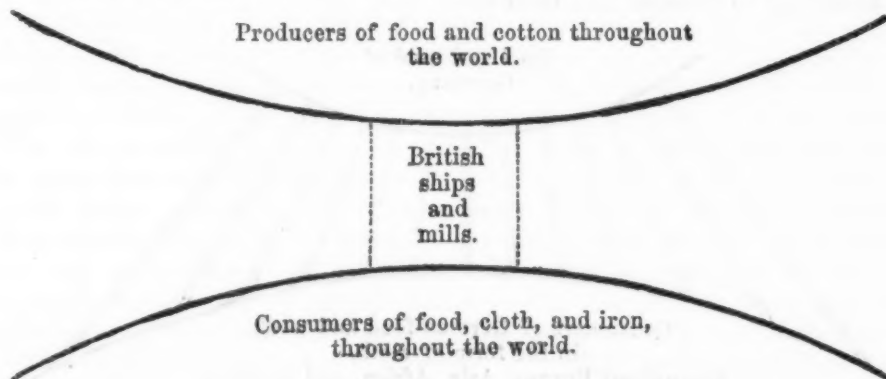
The first was a period of high protection, when the domestic market was rapidly increasing; the second was that of the strictly revenue tariff of twenty per cent. duties, when the domestic market had almost disappeared; the third was one of high protection, when mills and furnaces were everywhere being built; and the last is one of British free trade, when mills and furnaces are being sold by the sheriff. In this period the population had nearly doubled, and yet the export of food is, as we see, but about a third more than it was twenty years since.

Again, admitting the possibility that the foreign market *could* be increased, the question would arise, which is the best one? In reply to this, I would beg you to remark, that every farmer understands that he it is that pays the cost of transportation, and therefore it is that he is so anxious to have a railroad. You know well that, in former times, when roads were bad, you sold your wheat at twenty cents a bushel, although it was then worth eighty or ninety cents, or perhaps even a dollar, in Philadelphia or New York. Since then the modes of transportation have been improved, and the price in Ohio is now but twelve or fifteen cents less than in Philadelphia or New York. You paid the cost of transportation then, and now *you* profit by the saving in the cost. That admitted, let us see why it is that it is higher now in New York than in Ohio. Clearly, because *you* have paid for carrying it to market. Again, why is it that it is higher in Liverpool than in New York? As clearly because *you* have paid for carrying it there. If it could be transported to Liverpool without cost, you would obtain the whole of the price at which it sold, *minus* commission; but as it cannot, you pay the cost of transportation. That understood, I would now ask you what it is that regulates the price in New York? Is it not the price that can be obtained for the trivial quantity that *must* go to Liverpool—"the surplus," as it is called? Do not prices go up in New York and Boston, Philadelphia and Pittsburgh, Ohio and Illinois, just as the markets of England rise or fall? Is it not boasted in that country that "Mark-Lane governs the world's prices," and is it not true that such is the case? Certainly it is; and yet the whole quantity of our food that is absorbed by English demand does not amount to *one per cent.* of the quantity that is raised in the country; and it is for the sake of finding a

market for that one per cent. that you close the coal and iron mines of Pennsylvania, Ohio, Indiana, and Illinois, and make yourselves dependent on a foreign market for all your supplies of cloth and iron. *Be assured it would be more advantageous to burn that food than to permit it to fix the price of the crop as now it does.*

That such is the fact, you can, I think, convince yourself, if you examine how it is that prices are affected by *a necessity* for going to a distance either to buy or to sell. In some parts of the country the farmers have been selling their potatoes for more than a dollar a bushel, for the reason that the local demand was greater than the local supply, and thus *a necessity for going abroad to purchase* five or ten per cent. of the quantity required for consumption has raised the price of the whole to the level of the cost of the small quantity needed from a distance. In other quarters, potatoes quite as good might be purchased for forty or fifty cents, for the reason that the local supply was greater than the local demand; and thus *a necessity for going abroad to sell a small proportion* of the quantity produced, diminishes the price of the whole crop to the level of that which can be obtained for "the surplus" that *must* go to the distant market; and this state of things must continue with all these potato-growers, so long as they *must rely on two markets*—the near and the distant. So is it with the producers of food throughout the Union: so long as they *MUST* depend on the distant market for the sale of however small a quantity of their products—*so long as they have not the power to choose between the near and the distant market*—so long the price they can obtain in that distant market for a "surplus" that is most insignificant in amount, and that does not equal one per cent. of the whole crop, must govern the price of the whole. Make a market on the land for its products, acquire *power* to determine between the distant and the near markets, and prices will rise to a level with those of English markets. Increase the power of consumption, and thus make a market for a trifling quantity more than is raised, and prices will rise to that degree which is required for importing the food of Canada, or of Russia. If you desire to see this proved in practice, let me beg of you to look to what is now going on with regard to beef and pork, the production of which diminishes as your people are more and more forsaking your State and the adjoining ones, and flying to Oregon and California. Ohio has not now as many hogs or cattle as it had three years since, and the consequence is, that the home production of pork and beef has fallen to a level with the home demand, and you have high prices, *because you are much less dependent on the distant market.* Diminish the supply and increase the demand, and prices will rise, because your dependence on the distant market will still further diminish. The object of the tariff of 1842 was that of producing power over our own actions, and diminishing our dependence on those of others; the object of that of 1846 is that of diminishing our power and increasing our dependence. The one tended to bring consumption up to a level with production, with constant tendency to improvement in the condition of the farmer; the other tends to convert all our consumers into producers, with constant tendency to deterioration of the condition of farmer, planter, labourer, and mechanic; and that it does produce that effect, is seen by the fact, that although we have added four or five millions to our population, we now consume a far less quantity of iron and far less quantities of cotton and woollen goods than we did five years since; and yet we then paid in our products for all we consumed, and now we go in debt for cotton and woollen goods, silks and iron, at the rate probably of *a hundred thousand dollars per day.*

The object of British free trade is to prevent the people of any part of the world from exchanging with each other except through the ships and the warehouses, the mills and the furnaces of England. The people of India cannot exchange with each other rice for cotton, without first sending both to Manchester; the consequence of which is, that the producer of rice goes naked, and the producer of cotton perishes of famine—almost the whole of their products being eaten up in the cost of transportation. The producer *must* support the middlemen, and the more of them that there are to be paid, the poorer he must be. The planter of Tennessee cannot exchange his cotton with his neighbour of Ohio or Illinois, for corn or pork, without first sending both to Manchester; and the consequence is, that he obtains but one bale of coarse cloth in exchange for five bales of cotton, when he should have one bale for two. He has too many middlemen to pay. You cannot exchange your products for cloth, until after both the cotton and the corn shall have travelled thousands of miles, that the latter may be passed through the stomach of an English artizan, who would do twice as much work for the same quantity of food if he were brought to the neighbourhood of your farm. You receive little cloth for your corn because you have too many middlemen to pay. The British system is fairly represented by the following diagram, to which I would ask your careful examination:—



The object of the system is that of driving the whole world into agriculture, that the products may be made to go through this narrow passage; and the people who advocate the system know well, that the larger the quantity that seeks to pass, the greater will be the friction, and the greater the charge for the privilege of getting through. Therefore it is that England is always prosperous when a large crop of cotton has to pass, and always the reverse when the crop is small; and yet it is in the latter case that the planters are enriched, while the large crop always impoverishes them. The whole tendency of the policy of England is toward the subjugation of the farmers and planters of the world. She desires to buy cotton cheap and to sell cloth dear—to buy food cheap and to sell iron dear; and she accomplishes her object wherever she has power, as is seen in the utter ruin of Ireland, India, Turkey, the West Indies, and Portugal—the favoured lands of Manchester free trade.

Having examined the condition of these countries, I would next beg you to look to the fact, that Russia, which is daily increasing in strength, is a country in which the farmer is protected in his efforts to bring the loom and the spade to the side of the plough and the harrow; and that there we find a most rapid increase in the consumption of cotton and other of the raw products of

distant countries—that Belgium, the very paradise of protection, is advancing in strength and wealth with great rapidity—and that Germany, since the adoption of protection in 1835, has increased her consumption of cotton more than three hundred per cent., and that her people consume more than twice as much iron per head as they did when they had what was called free trade. Fifteen years since, it was supposed that Germany must always have a large “surplus” of wool to go to England; and yet so rapidly has the domestic manufacture increased, that the export has almost ceased, and she is now a large importer of other wools to mix with her own. Formerly, most of her wool and her food had to pass through the ships and mills of England, because there was no power to choose between the near market and the distant one, and the price of the whole crop was fixed by that which could be obtained for the quantity sent to the market of Leeds, *minus the cost of transportation*. Now she imports foreign wools, and the price at home of the *whole crop* is determined by the cost of obtaining the small quantity needed from abroad; and *she now has direct trade with all the world*, because she combines her food and her wool in the form of cloth, in accordance with the views of ADAM SMITH, the father of real free trade, and the opponent of what is now known as Manchester free trade. Having given a diagram representing the trade in food and wool according to the latter, I will now give you one according to German free trade:—



The nation that desires to have free trade *must* place itself in a position to finish its commodities so as to fit them for consumption. It can then have a thousand outlets, whereas, when it does not so finish them, it must trade through the medium of the owners of the mills and steam-engines. Had you no grist-mills in the West, you would be compelled to make all your exchanges with consumers at home and abroad through the mills of the East. Ireland and India, Portugal and Turkey have little or no machinery, and they are forced to perform all their exchanges through England; and such was the case with ourselves until protection was adopted in 1828. At that time it would have been deemed the height of absurdity to suppose that we could ever supply other people than ourselves with cotton and food compressed into the form of cotton cloth; and yet we are now large exporters of cottons, and our exports of manufactured goods have risen to a level with our exports of vegetable food of all descriptions to all parts of the world.* We see, thus, that protection has produced with us the same effect that it has produced in Germany—that

* Exports of cottons, 1850-51	\$7,241,205
Exports of manufactures, 1850-51	16,834,000
Exports of vegetable food, “	16,877,844

is, it has reduced the price of manufactured goods so far as to enable us to send them into foreign markets. Seventeen years since, Germany sold her wool and bought cloth, and the producers of the first obtained low prices for the one, and gave high prices for the other. Now she buys wool and sells cloth, and her domestic producers of wool obtain high prices for the one, while they obtain the other at low ones. Seventeen years since, the people of Germany obtained their hardware from Birmingham, for which they paid, of course, British prices *plus* the cost of importation: now they manufacture hardware, and they themselves are so cheaply supplied, that they are enabled to sell it even in Birmingham. Protection has therefore produced competition for the *purchase of the raw products* of the earth, and for the *sale of manufactured ones*, thus raising the prices of the one, and lowering those of the other; and it has done this in France, Belgium, Germany, and Russia, precisely as it did in this country under the tariff of 1842; and therefore it has been, and now is, that the protected countries of the world increase in strength. British free trade tends to destroy competition for the purchase of raw produce, and to lower its prices, and equally to destroy competition for the sale of manufactured articles, raising their prices, as we now see to be the case with iron as our furnaces are being closed; and therefore it is that we see that all the free trade countries of the world diminish daily in strength and the power of self-protection.

To determine what we should do ourselves, it may not be amiss to look around and see what it is that we should desire others to do. Russia now makes a market at home for vast quantities of food consumed by the people engaged in a vast variety of pursuits that are protected against British competition. Were she to abolish protection, her factories would be closed, and there would be more food to go to England, and the price of food would fall, and you would suffer. You therefore would wish Russia to continue protection. Were Germany to abolish protection, she would have more food and wool to sell, and prices would fall, to your disadvantage. If, then, it is desirable to you that Russia and Germany should continue protection, is it not at least probable that you would be benefited by the adoption of a system that would altogether relieve you from the necessity for contending with the Russian or Polish serf for the constantly diminishing market of England? Having answered to yourself that question, I would then beg you to remark that the whole tendency of the Manchester system is that of *compelling* you and all brother agriculturists of the world, *to compete with each other* for the supplying of *the one market* that is left open to you. You need competition for the purchase of your products, and until you can have it, prices must continue low.

It will, however, be said that protection tends to compel you to sell at Lowell and Providence, even if it relieves you from the necessity for going to Manchester. Not so. Real and efficient protection tends to enable you to convert your food into iron made in your own neighbourhood. It tends to enable your neighbour of Indiana to mine his coal, and apply it to the driving of spindles and looms employed in converting into cloth the cotton of Tennessee and Mississippi, received in exchange for your pork and your beef. It tends to enable Illinois to mine her coal, and apply it to the working of her lead-mines, that should yield twenty pounds where now they yield but one. It tends to enable the people of Wisconsin and Michigan to find a market in the vast copper and iron region of Lake Superior. It tends to enable people to raise flax and hemp, who now raise food; and everywhere to make *a local market for food*, and thus to relieve the farmer from the neces-

sity for going to either Lowell or Manchester. The present state of things tends to destroy all the small manufacturers throughout the Union, and to render you more dependent on New England and other of the Atlantic States. Already the manufacture of cotton, South and West of New England, has greatly decreased. The iron manufacture of your State is almost at an end, as is that of New York and New England; and you are becoming daily more and more dependent on Pennsylvania for that commodity, as you are becoming dependent on Massachusetts for your cloth. The system tends to make the rich richer and the poor poorer. The rich man meets the storm, but the poor one is crushed, and then the rich man makes his profit, as is at this moment being done by the few rich iron-makers that have survived until the destruction of home competition has been followed by a rise in the foreign price of iron *greater than would have been needed in the tariff, not only to have maintained but to have largely increased domestic production.* Next, the closing of your lead-mines, and your coal and iron mines, compels you to send all your food to the East, and thus you ruin the farmers of Pennsylvania, Connecticut, and Massachusetts, who find a perpetual stream of food passing over their heads, the price of all of which is fixed by that which can be obtained for the trivial quantity that goes to England. It is time that you farmers of the West should understand that your interests are all identical with those of the farmers of the East, and that both they and you profit by every measure that tends to make a market on the land, while both you and they suffer by every one that tends to produce dependence on distant markets. Had the tariff of 1842 continued to the present time, there would have been far less necessity for abandoning the old States, and you would have less competition to meet from the occupants of the new ones, while the markets that would have grown up around you would be absorbing a vast proportion of the food with which you now deluge the markets of the East.

So far does protection tend to diminish your dependence on the East, that it is a well-known fact that many manufacturers deprecate the adoption of measures of efficient and complete protection, under the impression that they would produce domestic competition; and such men would prefer even the present state of things, as tending to compel you to send all your wool to Lowell or Providence, and to limit the planters to Lowell, Lawrence, and Manchester. These men retain the erroneous monopoly views of the Manchester school. That views like these are entertained no one can doubt, but they are not entertained by men of enlarged ideas; for such men know well that if the South would determine to adopt measures tending to enable themselves to furnish the world with coarse cottons, they would at once be enabled to turn their machinery to finer ones; that if the West would determine to make negro and other coarse cloths, they themselves would be enabled to sell ten times the quantity of shawls and carpets; and that if Ohio and Indiana, Illinois, Missouri, and Tennessee would enable themselves to make all their stoves and other castings, they would be enabled to purchase more railroad bars, steam-engines, and locomotives, and that the only effect of such measures would be to increase the reward of labour and of capital in every part of the Union. There is perfect harmony of true interests between the North and the South, the East and the West; between the labourer and the capitalist, the farmer and the manufacturer. Manchester free trade teaches the reverse, and the prolongation of its existence to this time is due to the fact that it everywhere teaches discord, and everywhere produces such discord as now exists between the Northern and Southern portions of the Union, due solely and exclusively to the British monopoly system.

That it should produce discord is the natural consequence of the poverty that everywhere accompanies its existence. It destroys the local demand for food, and, as a necessary consequence, impoverishes the land and its owner, who is deprived of the power to manure his land or to improve his machinery of cultivation, and is thus compelled to abandon his property and fly to the West. It everywhere destroys the local demand for labour, and men starve in Ireland because unable to find employment at even *sixpence* a day. Look around your own neighbourhood, and see if there is not more labour wasted every year than would suffice to build a mill or a furnace, and more every year than would suffice for the production of all the iron and all the cloth that are consumed. It destroys the power to vary the products of the earth, because every man is compelled to cultivate those articles alone of which the earth yields little in reward of labour, and that will therefore bear transportation to distant markets; and a necessary consequence of this is, that unfavourable weather for a few weeks is followed by an almost total failure of return to labour. How different would it be if there existed a local demand for all the various commodities that are produced from the land of Belgium and of England! The nearer the market, the greater are the powers of the land and of its owner; the more distant the market, the poorer the land and its owner, and the less the power of the latter to determine for himself what shall be his course of action. It is to this absence of power over their own actions that we owe the fact that our people are constantly scattering themselves over the earth, when every man knows that his labour is doubly productive when he works in concert with his fellow-men. When men come together, they have better schools and better teachers; their morals and their intellect both improve, and their labour becomes more productive. British free trade looks to the dispersion, demoralization, and impoverishment of man, and therefore it is that it is everywhere accompanied by discord.

Gold becomes more abundant, and yet the price of wheat declines when it should rise, and would rise were it not that all the world is now engaged in raising food for a diminishing market. The total population of the British empire in Europe is scarcely more than it was a dozen years since, and it is gradually but certainly declining, as the emigration is more, *and considerably more*, than the excess of births over deaths. It is adults, too, that fly, and their places are supplied by infants, among whom deaths are three times more numerous than among men and women who emigrate.* It is impossible to study the facts now occurring in England without being satisfied—

1. That the numbers of the only manufacturing population of the world that buys food will be less ten years hence than they are now; and,

2. That the power to supply themselves with home-grown food will be far greater than now. At the moment of writing this, I meet with an account of the discovery of a species of wheat that promises to give returns thrice as large as any now cultivated; and if such should prove to be the case, you will, I think, see that the day is at hand when England will cease altogether to import wheat. On the other hand, our population in the next ten years will grow at the rate of more than a million per annum; and if all become farmers, as they must, what, I would ask you, will be our condition? Is it not clear that we shall have abundance of food for which we shall have no market, and that such a state of things must be ruinous to the farmer?

* "As 330,000 emigrants leave the British shores every year, THERE IS AN ANNUAL DECREASE UPON THE WHOLE OF 100,000 SOULS; and that not of infants or worn-out old persons, but chiefly young men and women in the prime of life."—*Blackwood*.

Even now, we are running in debt for cloth, iron, and silk that we should manufacture at home, to the extent of twenty, thirty, or forty millions per annum, and our foreign debt requires almost twenty millions of dollars for the payment of interest. Should we continue much longer in this course? Can the result be any thing but bankruptcy and ruin? That it cannot, you will, I think, agree with me. We are now devoting our whole energies to the making of roads, and are making them with borrowed money; but the day of payment must come, and then must come a crash like that of 1842, after which your farmers will feel and understand the effect of a system that is multiplying their competitors and diminishing their customers.

In conclusion, let me ask you what it is that you desire? Is it not higher prices for your wheat and your corn? Undoubtedly it is. What then is it that Manchester desires? Is it not lower prices for wheat and corn? Undoubtedly it is so. The object, then, of British free traders is precisely the reverse of yours; and yet when you desire to ascertain how you may secure the attainment of your object, you go to Manchester free traders for advice. They are opposed to protection in Russia, and yet the abolition of protection in that country would cause a vast quantity of grain to be thrown on the always diminishing market of England, with great reduction of price. They are opposed to protection in Germany and Belgium, yet protection makes a steadily increasing market for the staples of those countries, and causes a vast domestic absorption of food. They are opposed to protection here, and yet under protection our annual consumption of food by people engaged in the various departments of mining and manufacture, increased, in five years, a hundred millions of dollars. They advocate free trade in Canada, which is paralyzed for want of a market, and has been for years struggling to gain access to our markets, the surplus in which was but recently stated at four hundred millions of bushels. They advocate free trade here, and yet under what they call free trade we see the domestic market steadily diminishing as we close our mills and furnaces, while as steadily is it seen driving our whole people into agriculture with a view to increase the "surplus." They advocate the policy that looks to giving you but one market in which to sell, and one in which to buy, and you desire a choice of markets. The objects you and they have in view are thus directly the opposite of each other, and as much opposed are the measures which tend to secure the attainment of those objects; and yet you and your friends throw up your caps and rejoice when you are told by the *London Times*, the *London Daily News*, the *London Morning Chronicle*, and the *London Economist*, of the success of British free trade policy in *cheapening food*—precisely the object that you desire not to see accomplished.

You asked me, "What are the prospects of the farmer?" They are, as I think, very gloomy. Our population grows, and our domestic market diminishes, and will continue to diminish, while the foreign one must inevitably diminish still more rapidly. Whether or not the people will insist upon a change of policy—whether or not the farmers and planters will awake to the fact that they it is that need protection, is a question yet to be decided. If they do not, both farmers and planters are, as I think, destined to see harder times than they have seen for many years.

Having now answered your question to the best of my ability, I remain,

With great regard,

Yours very truly,

HENRY C. CAREY.

Burlington, August 20, 1852.

LIME AND ITS COMPOUNDS.

LIME, in some of its combinations, is found in all our crops. Those named below contain it in the following proportions: 25 lbs. of wheat contain $8\frac{1}{2}$ lbs.; 38 bush. of barley, 15 lbs.; 50 bush. of oats, 8 lbs.; 2 tons of clover, 126 lbs.; 9 tons of potatoes, 266 lbs.

The presence of lime in the soil may be recognized by bringing it in contact with an acid; an effervescence will be produced.

Some reliance may also be placed upon the nature of the weeds or the spontaneous growth of a soil. Lime will be found wanting in those which produce red sheep-sorrel, the chestnut, and resinous trees. The application of lime is one of the surest modes of eradicating those plants. It neutralizes the acids, which abound in them.

It should not be understood, however, that a successful experiment of this sort (the destruction of such growths) is all that is required; the farmer has then but just rid himself of some of the hindrances in the way of successful cultivation. He must now provide, generously, those fertilizers which will secure him a rich harvest.

To some extent lime acts as a fertilizer, and perhaps this is owing to its attraction of carbon from the atmosphere; for it is well known that the effect of carbonate of lime and of pure lime is essentially the same. Pure lime becomes a carbonate whenever it is exposed to the air; but pure lime has a superiority over the carbonate in its ability to decompose vegetable or any other organic matter. Hence it is always useful when green crops are ploughed in, or new grounds are broken up. Most fruit trees also consume large quantities of lime.

Quicklime has the power of setting free the ammonia from guano and from fermenting manures. Hence its use in connection with such fertilizers, that is, *when they are first applied*, should generally be avoided.

Recent analyses of soils in Ohio, Iowa, and Wisconsin, by Dr. Wells and Dr. Owen, lead to the conclusion that those soils are not derived from the disintegration of underlying rocks, but from materials brought from a distance. For notwithstanding those rocks are chiefly carbonate of lime, not the slightest trace of carbonic acid was found in the soils. Hence the presence of limestone in the rocks of a given territory must not be held as conclusive evidence that these elements exist in the soil. Actual analysis alone can demonstrate the fact.

Lime is useful in clay soils, by diminishing its adhesiveness, and by setting free its alkalies. Slacked lime acts most speedily, but the effects of the carbonate are more permanent.

Sulphate of lime, or gypsum, is serviceable in various ways. It retains useful elements that would otherwise be lost, as ammonia; it acts as a stimulant upon loams and peaty soils; it is also a fertilizer, furnishing the necessary food for the growth of the crop. But if humic acid is abundant, it will decompose the gypsum, and the sulphuric acid being set free, will prove injurious to the roots of the growth. On soils very rich with humus, gypsum should therefore be used very sparingly.

Gypsum may be used either in a powder, in the *raw* state, or *roasted*, that is, calcined. It is especially beneficial when applied to the growth of clover, beans, peas, and sundry grasses; but less serviceable to grains, turnips, and other green crops. It may be applied to the surface, scattering it broadcast, or placed in the hills, at the time of planting, or applied at later periods. It

may also be used on the compost heap. On grass land it should be sown in the spring. But if sown in the fall, it will be chiefly beneficial to the next year's crop. When applied to grain, 200 or 300 lbs. per acre is generally used, and on grass lands five or six bushels to the acre.

The phosphate of lime is one of the most essential kinds of manure, which must be applied, in some form, on all lands from which crops are taken. One of its elements at least, the phosphorus, is often exhausted sooner than any other of the constituents of the growth. But so much has been said of it elsewhere, we need not enlarge here, in these elementary suggestions. Our readers will find frequent allusions to it, both in the past and in the future numbers of our journal.

COTTON IN AFRICA.

WE commend the following article to the careful perusal of such of our planting readers as yet continue under the delusion that they are to be enriched by placing themselves from year to year more and more under the control of the Manchester manufacturers, whose great object is that of having cheap cotton, when by a single united effort they could so easily bring the cotton machinery to their own cotton fields :

CAPE COAST CASTLE COTTON FIELDS.—The Manchester Commercial Association has received intelligence of the successful result of some experiments in cotton cultivation at Cape Coast Castle, in Africa. A year and a half ago some of the members of this association subscribed upwards of £1,500 towards an experiment of this kind. The money was sent to agents (merchants generally) at Cape Coast Castle. A site was selected, about five miles inland, on the banks of a small stream, and the process of planting the indigenous cotton shrub was commenced. The plant is perennial, and grows to a considerable size, the stalk being in many cases several inches in diameter. The seeds are kidney-shaped, and they lie matted together in the pod, very much like the Brazilian species. From time to time the most favorable accounts have come to hand; and so long since as October last, it was announced that thirty acres of ground had been cleared, and then bore 19,600 "trees," all of which were "fresh and healthy, and seem to be growing fast. They are almost covered with unripe pods, blossoms or buds; and in two or three weeks, after having had the benefit of the October rains, they will look better than they do now. In two or three months many of those first planted will realize a good crop." So wrote the agent; and as earnest of the truth of his expectations, there were received in Manchester, last week, five bags or bales of cotton, each weighing $1\frac{1}{2}$ cwt., and a sample parcel weighing 30 or 40 lbs., all the produce of the one farm mentioned. The cotton has been examined and found very closely to resemble Brazilian, or rather Egyptian; it is of extremely good color and fair short staple, has been well cleaned (without injury) by saw gin, and is worth fully 6d. per lb. The cost of its production and transit to Manchester is said to have exceeded 3d. per lb.; a result strongly confirmatory of the assertion that cotton cultivation in Africa may be rendered remunerative. As to the disposition of the native Africans, they have been found in this instance to accept work on the farm with absolute avidity, not only on account of the readiness with which the wages asked were paid, but apparently with an intense desire to imitate or assist Europeans, and they evinced pride in being brought into connection with the whites. Men, as many as were required in the clearing and preparatory operations, worked diligently and regularly for two dollars a month; women for a dollar and a half; and stout lads for half a dollar, without rations in any case. According to the last accounts respecting the farm, men have rarely been employed since the "trees" have been planted; the labor of women and children being found quite sufficient for all ordinary purposes. The hands worked eight hours a day, and seemed thoroughly contented with themselves and their masters. The example became contagious soon after the experimental farm was cleared; for so long since as October last, several European residents had started plantations on their own account, and on one lot alone there were 20,000 flourishing trees. The average yield has been

found to be most satisfactory. Now, those who have hitherto conducted the experiment so nobly originated by a few gentlemen in Manchester, are desirous that regularly-trained persons should be sent out to superintend the several plantations which must ere this be in existence; the originators are most desirous to see the resources of the Cape Coast Castle district more fully developed; and we think we have stated enough to show that while extended operations could not fail to be highly advantageous to the trade of this district, they would certainly return remunerative profits for any investments.—*Liverpool Times*.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

PROFESSOR SALOMON AND HIS CARBON ENGINE.

BY JOHN B. NEWMAN, M.D.

AN advertisement which I lately read in one of the Washington papers, by the attorney of Professor Salomon, offering for sale rights for his inventions, among which was the celebrated Carbon Engine, recalled the old man and the story of his life very vividly to my mind, and determined me to answer the inquiries of many persons who wished to know something of the inventor, and of the rise and progress of an invention that the papers promised should supersede steam, by the introduction of a new motor out of all proportion more powerful and more economical, and at the same time perfectly safe. The information desired, I purpose to give in this article; believing that a short sketch of his life will furnish another instance of the truth of the saying, that real life is stranger than any thing fiction can invent.

On the 22d day of March, 1830, there landed from the New-York, Capt. Bennel, one of the packets of the Liverpool line, an individual, a Prussian by birth, who, jumping upon the dock, kissed the soil of the United States, and inquiring his way to the Marine Court, immediately proceeded there to forswear allegiance to foreign potentates and powers, and declare his intention of becoming a citizen of this free country. This man was Charles J. C. Fr. Salomon. His grandfather had been a celebrated general under Frederick the Great. His father was a wealthy gentleman of Silesia, the owner and manager of several foundries, whose business he carried on, in connection with the cultivation of his own estate. Priessnitz, of Graefenberg, was a neighbor, whose history is well known to the subject of this sketch. Charles was born April 6th, 1793, and is now consequently nearly sixty years old.

The government of Prussia requires every child, between the ages of six and fourteen, to attend school. Charles was accordingly sent until the age of ten, when he was removed, and placed in charge of the Protestant Bishop Reiber. After remaining with him three years, he entered the college at Breslau, graduated in due time, and then entered the Seminary for Teachers located in the same place. At the age of eighteen, the prescribed course was completed, and, in accordance with the custom of his country, he volunteered in the army of General York, who commanded the army Napoleon obliged Prussia to send him on his Russian expedition. On the return of the army after that disastrous campaign, York was superseded by Kliest; and Salomon, with many others, indignant at the change, returned home. Frederick William, then a mere vassal under Napoleon, perceiving some chance of throwing off the chains under which he writhed, in consequence of the weakened power of his conqueror, offered his people a free constitution if they would take up arms against France. The proffer was accepted with a burst of enthusiasm, and the nation rose to a man. Salomon, again

in arms, served with his countrymen under Blucher at the battle of Waterloo. On the return of the Allied Armies from Paris, the volunteers were disbanded, and Salomon became Professor at Berlin, in the institute of Plamau, which was conducted after the manner of Pestalozzi, whose system the Professor had learnt from himself in his own school. Soon after this he received the command of government to take charge of the Seminary for Teachers at Erfurt, (the place Luther commenced the Reformation ;) and at the same time, was appointed one of the directors of the Orphan Asylum there. He was now in a position where his talents, aided by his family influence, seemed to promise the sure and speedy attainment of fame and fortune.

The great foundation of despotic power is laid in the idea of the divine right of kings. That idea had lately received a death-blow on the continent of Europe, from which it could never recover. The people had seen God's elect and anointed ones holding the stirrup for a Corsican cadet; and the sight taught them a lesson of equal rights and the natural freedom of man. A dim notion pervaded Europe that the poor peasant had as much divine right as the royal prince to the enjoyment of freedom and the pursuit of happiness. A general conspiracy, whose object was to secure these privileges, was the result; and it included among its members great numbers of persons in almost every country in Europe. The people of Prussia, tired of waiting the generosity of Frederick William in fulfilling his promise, or rather compact, of a free constitution, and reigning as citizen king, at last joined it. Salomon and Follen were among the prominent leaders. By some means the various governments had obtained information of what was going on; and the presentation of a petition, signed by thousands in Prussia, was the signal of arrest not only to the signers but thousands of the suspected in other countries. Follen escaped to the United States, where he became Professor of Languages in Harvard University; but Salomon was taken, his property confiscated, and his wife and children sent to her father's house, which was attached to the government. He was imprisoned in the dungeons of Coepnich, Berlin, and Stettin. Despite every effort, the King failed to extort the details of the conspiracy, so that, although his vigilance rendered every attempt at rebellion nugatory, no sentence could be passed on the supposed leaders, who were, however, treated with the extreme of cruelty and rigor. Salomon, of course, used every effort to escape; was retaken on the first attempt, but succeeded on the second in leaving Stettin, reaching London, and thence the United States. He owed his deliverance to the assistance of Henry Brachman, now a wealthy citizen of Cincinnati.

Salomon had taken advantage of the times when he visited his father to learn working with metal, had become an expert workman, and was noted from boyhood for his many improvements and inventions in machinery. It was this talent, contrary to his expectations, that was to make him eminent in the United States. On his return to the vessel the day he landed, a steamboat lying near collapsed her boiler. He went on board to examine the matter, and noticed particularly that the boiler had collapsed into the form of inverted arches. He thought he could account for this form, and that a valuable hint could be derived from it, whereby all future explosions might be prevented. Following the example of his countrymen, he lost no time in starting for the West; and soon after reaching Cincinnati was appointed to take charge of a large German school. This allowed him leisure to perfect his plans, and put the result of his meditations on the collapse into a metallic form. He went to Washington, patented the Inverted Arch

Steam-boiler, and sold it to an English company, whose failure soon after left him nothing but the first payment (£1,000) as compensation. The Great Western had boilers of this pattern.

Soon after this, while travelling in Pennsylvania, he improved the tanning processes, by the substitution of dilute muriatic acid for the nauseous mixture gathered from the stable-yard and similar sources, to neutralize the lime used in removing hair from skins. His method enabled the process to be performed in minutes instead of weeks, and by its superior cleanliness did away with the most disagreeable part of the labor. It seems destined that inventors should rarely become wealthy, and Salomon was not an exception to the rule. Something always happened to divide the profit from the honor in his case, and the latter not being sufficient to afford subsistence, he returned West.

The accomplishments, as they are called, always pay the teacher better than the useful branches of education; and Salomon determined to take advantage of this fact in affording him the means of living in his after career. Discarding literature, he located himself in Shelbyville, Ky., and began teaching music, vocal and instrumental. In Prussia, music is an indispensable part of education, and the children learn the notes with their letters. Salomon understood the theory and practice thoroughly, was withal a good composer, and unusually apt as a teacher. He had in his favor a prejudice, universal in the West, that none but a German can teach music; and, altogether, did exceedingly well. He had now a fortune again at his command; but he chanced to hit on two new inventions: one for supplying ships with fresh water at sea, by distilling salt water, and the other an improvement in saw-mills. From his inland location he could only experiment with the former; but it was different with the latter: to put it in practice he gave up teaching, entered into business, and, need I say, failed.

From Shelbyville he removed to Harrodsburg, the geographical centre of Kentucky. It was there I became personally acquainted with him. He had been sedulously attending to his business some seven or eight years, and his reputation as a professor of music was unequalled in the Southwest. He had charge of the music department in the Female College of which I was President; and this, together with his receipts for private pupils, gave him an income of \$2,500. He occupied a large house built after his own design; had a fine farm; kept his carriage; and was living like the most wealthy people of the town. Some two years before this he had perfected the Grasshopper Saddle, modelled after the insect whose name it bears; a most ingenious invention, equalizing the weight on the back of the horse, and securing perfect ease and safety to the rider. About the time I first saw him, his thoughts were much bent on European politics; and he was wont to give many eloquent expositions of that doctrine which Kossuth has since spread over the country, known as Intervention for Non-Intervention.

If, as has been often said, it is the prerogative of genius to carry the feelings of childhood throughout life into old age, Salomon is certainly entitled to the appellation. A child-like simplicity and honest enthusiasm pervaded his whole discourse and demeanor. I often accompanied him home after the labors of the day were over, and would listen with increasing interest to his music and conversation. I saw at his house and examined the model for distilling fresh water from salt, and the Grasshopper Saddle, and the Inverted Arch Steam-boiler; which last he had been improving, so that only pure water could enter it, thus dispensing with the cleansing necessary when

salt water was employed : he was doing this in the expectation of taking out a patent for the improvement, as the first patent would expire in 1852.

One day, while he was showing me his house, I noticed in a corner of a room through which I was passing, some globes of thin sheet copper, and asked him what they were intended for. "They are a part," said he, "of my Carbon Engine, the details of which I have been perfecting in my own mind since 1831."

"Have you mentally completed it yet?"

"Yes, for several years back ; but I have not the money to put it into execution. All the models I have were made by myself in spare hours, but this is an undertaking that would require money, and I have none, as I fully live up to my income."

There are few persons well versed in chemistry and mechanics who have not, at some period of their experience, devoted considerable thought to the use of carbonic acid as a motor. Brevier and others have been killed by the explosion of their cylinders while experimenting for this object. Brunel, who succeeded in tunnelling the Thames river, failed in this. Among the rest, I had narrowly escaped in early life, and for years had forgotten the subject ; but this conversation revived all my former interest, and it may be easily imagined I did not let the discourse drop here. Before giving the information which I received from him, it is well to tell something of the properties of the gas, and the method of obtaining it, and will be assisted in doing so by a highly-flowered description, which relates the same story in a metaphorical guise, from the Story of the Fisherman in the Arabian Nights' Entertainments :

"And the fisherman opened his net and found in it a bottle of brass, filled with something, and having its mouth closed with a stopper of lead. And his heart rejoiced ; and he shook it and found it very heavy, and said, I must open and see what is in it, and store it in my bag ; then I will sell the bottle in the copper market. So he took a knife and picked at the lead until he extracted it from the bottle. He then laid the bottle on the ground and shook it, that its contents might pour out ; but there came forth from it nothing but smoke, which ascended towards the sky, and spread over the face of the earth ; at which he wondered excessively. And after a little while, the smoke collected together, and was condensed, and then became agitated, and was converted into an Afrite, whose head was in the clouds, and his feet rested upon the ground. When the fisherman beheld him, the muscles of his sides quivered, his teeth were locked together, his spittle dried up, and he saw not his way. The Afrite said to him, Receive news, O fisherman ! Of what, said the fisherman, dost thou give me news ? He answered, Of thy being instantly put to a cruel death. So he said to the Afrite, Hast thou determined to kill me ? He answered, Yes. Then, said he, by the Most Great Name engraved upon the seal of Solomon, I will ask thee one question ; and wilt thou answer me truly ? On hearing the mention of the Most Great Name, the Afrite was agitated and trembled, and replied, Yes ; ask, and be brief. The fisherman then said, How wast thou in this bottle ? it will not contain thy hand or thy foot ; how, then, can it contain thy whole body ? Dost thou not believe that I was in it ? said the Afrite. The fisherman answered, I will never believe thee until I see thee in it. Upon this the Afrite shook and became converted again into smoke, which rose to the sky, and then became condensed, and entered the bottle by little and little until it was all inclosed ; when the fisherman hastily snatched the

sealed leaden stopper, and having replaced it in the mouth of the bottle, called out to the Afrite that he would throw him into the sea again."

Without dwelling further on the story, it is sufficient to state that the Afrite bound himself not to injure the fisherman if released, and still more, to make him one of the fortunate ones of the earth; and performed both promises.

In the last century, some students in the University of Jena invoked the Afrite by burning a pan of charcoal in a close room, for the purpose of "raising the devil," after the plan of the most approved formula for that purpose. All but two were killed. Let us more safely imitate the example of the fisherman, not by casting a net into the sea, but by pouring some sulphuric acid on a little common chalk or whiting in a saucer, immediately placing over the saucer a glass receiver. An immense amount of gas is at once evolved, which if breathed is as destructive to life as the Afrite could be to the fisherman. Having succeeded in setting it free, our next best plan will be to invoke a spell to bind it once more; and this we can do by introducing under the receiver a cup containing quicklime or lime-water; the gas rapidly unites with it, and as a part of chalk is harmless and even useful. Many fishermen have drawn up the bottle and let out the giant, but those who could escape were only too glad to do so with life; and it remained for Professor Salomon, like his namesake of old, who had credit for power over spirits, to extort the promise of fortune, and have that promise realized by making the Afrite work in harness.

The chemical formula of carbonic acid is CO^2 ; that is, two atoms of oxygen to one of carbon; which two atoms of *vital air*, when joined to the one atom of charcoal, enables the latter to take wings and fly away. Encircling every atom of matter are two forces or atmospheres—one an attractive, which is the most interior, and the other a repulsive, which is exterior to the first. If the attractive force predominates, so that the particles approach closely, the substance assumes the form of a solid; if the forces are exactly balanced, the form of a liquid; and if the repulsive force predominates, the form of a gas. Now, between the particles of this compound of oxygen and carbon, the repulsive force is in a state of very great and preponderating activity, and the atoms must remain naturally at great distances apart, in, of course, the gaseous form, exerting immense force to assume it when any obstacle intervenes. When generated in a proper vessel, at zero the carbonic acid assumes the liquid form; its power in this state may be judged from the fact that it exerts then a pressure of thirty-six atmospheres, or five hundred and forty pounds to the square inch!

As carbonic acid is a dangerous agent, and consequently not safe to be suffered to go at large, Nature has appointed a series of constables to seize it whenever found. The green leaves of the entire vegetable kingdom perform this office when they find it in the air. Nor is it safe on the ground or in caverns; many mineral agents seize it, among which water and lime hold a prominent rank. All these various jailors make it useful to man: the leaves of vegetables decompose it, throwing off the oxygen and retaining the carbon, to perfect the sap, from which is made wood for fuel, and grains and fruits for nutriment. The soda-water of the shops is nothing more than this gas dissolved in water. Strange to say, that which, if respired and acting on the lungs, would prove instantly fatal, if swallowed and acting on the coats of the stomach, serves as a pleasant tonic; one among the many wonders of physiology, showing that what often is poisonous to one part of the body is healthful to another part; as illustrative of which, the poisonous secretions

of snakes may be cited : introduced under the skin they are fatal, but taken in the stomach, perfectly harmless.

The relations of carbonic acid to lime render it more especially interesting in this connection. Take a glass of clear lime-water and breathe slowly into it through a tube, whose end is under the water and near the bottom of the glass. The carbonic acid thrown off from the lungs is seized in its passage through the water, and the resulting compound, in the form of chalk, (carbonate of lime,) floats in fine powder upon the surface. Remove the chalk, and add to it some sulphuric acid, the bribe proves effectual; the lime instantly leaves the carbonic acid and unites with the sulphuric, forming sulphate of lime or plaster of Paris. The same kind of process is observed whenever we make a glass of soda-water; the blue paper contains carbonate of soda, the white, tartaric acid : dissolve each separately in one third of a glass of water, and pour one solution into the other; the soda unites with the tartaric acid, forming tartrate of soda, while the gas set free bubbles simultaneously to the surface, and flies off. The violence with which it escapes may help to give an idea of its real power and capability as a motor.

We have now arrived at a point where we can perceive the advantages of carbonic acid over steam as a motor, and the manner in which both work to effect their object. Steam is used to drive a piston, with greater or less force, backwards and forwards along the inside of a cylinder; the connection of the piston with other parts of the machinery effects all the requisite motions desired. Carbonic acid acts precisely in the same manner, and thus far there is no advantage. Steam is made from water, and as the latter exists naturally as a liquid, the attractive and repulsive forces around the atoms are in equilibrium. To cause it to assume the gaseous form, the repulsive force must be made greatly superior. Gravity is supposed to be a synonym for the attractive force, and caloric, or the agent producing heat, for the repulsive. The application of heat, then, will cause the particles to diverge to the required extent; but as water requires 212 degrees of heat to become steam, an immense amount of fuel is necessary. When the requisite quantity of steam is formed, a portion is conducted to the cylinder, which opens near the piston. Not having room enough for expansion, it drives the piston before it to a certain distance, when suddenly a valve opens communicating with a vacuum, produced by the constant action of an air-pump, and the steam is instantly withdrawn; at this moment a valve opens on the opposite side of the cylinder, behind the piston, which has been driven there, and a fresh portion of steam drives it back again from whence it started; this steam is removed by the opening of a valve connecting with the vacuum, and thus an incessant play is kept up. By a series of ingenious contrivances, the engine itself is made to regulate the amount of steam introduced to drive the piston, and the exact moment of its withdrawal. Low-pressure engines save much of the steam which enters the vacuum, and use it over again; but the high-pressure allow it to escape in a succession of puffs, the presence or absence of which puffs easily distinguishing the two kinds when in action.

It may be easily observed from this analysis that it is the repulsive force alone which is the real motor. If the steam had room enough to expand between the piston and end of the cylinder, no motion would result; but as it must have this space, it violently urges the piston before it the proper distance. The repulsive force can only be conquered by something superior to itself. An idea of the power necessary for such an object may be obtained by witnessing the mode by which masses of rock are sometimes split. A few

grooves are made in the upper part of the rock in the desired line, and small wedges of wood hammered in the grooves, and these wedges saturated with water. The repulsive force between the particles of water, thus constrained, acts so powerfully to overcome the obstruction, that the entire line of rock is fractured. Some years since, I saw a large block of granite, intended for a public building, split in this manner, and rendered useless for its destined purpose: it had a small cavity in the upper part which the rain filled, and this water freezing during the night split the block into two portions.

Water, then, is a mere vehicle for the repulsive force in the form of heat, and the more intense the fire, the greater the power; hence the amount of highly combustible matters thrown into furnaces under the boilers of steam-boats when racing, and the great danger thereby incurred. Ericsson perceived this fact, and saw that if he could contrive the right kind of apparatus, he could make air serve a better purpose than water; and there is little doubt his Caloric Engine will eventually succeed.

Take a small iron cylinder whose pieces screw together in the middle so as to be hermetically tight, and having filled it with water, suspend it over the fire; in a certain time the expulsive force will have gained power enough from the heat to burst it into pieces; but it need harm no one, as there is time sufficient to get out of the way. Take the same kind of cylinder and place in it a quantity of chalk and of sulphuric acid, so fixed that by turning a screw they will mix together; make the cylinder tight, and cause the materials to unite; in an instant there is a violent explosion, and the room is filled with a deadly poison. These experiments show somewhat the relative danger of the two agents, and excite our interest to know how Salomon could overcome the obstacles in his way. His maxim was to "divide and conquer," and in this lay much of the excellence of his invention. The spherical form is the strongest, and so in a cast-iron globe, two inches in thickness, he purposed to generate his gas. The globes, tubes, and all that the sulphuric acid could gain access to, were, of course, to be lined with lead. From the generator the gas was to be received into a second globe, termed the reservoir, and from this last conducted to the cylinder. After leaving the reservoir, and just before entering the cylinder, heat was to be applied still further to increase its elastic force. Thus prepared, it was to enter the cylinder and enlarge its space by driving the piston before it. At a certain point, as in the steam-engine, the valve communicating with an exhausted receiver was to open, and the gas to be instantly withdrawn; the same series of actions to take place on the other side of the piston, the whole causing it to be constantly driven backwards and forwards. The next point was to save the gas for re-use, and this to be accomplished by means of hydrostatic pressure with the force-pump, condensing it into a third globe which communicated with the reservoir. The machinery connecting with the piston for the various mechanical purposes is alike in the steam and carbon engines; and with the exception of the furnaces and boilers, which are unnecessary, the apparatus of one could be readily adapted to the other.

The advantages of the invention as thus stated were obvious at once. Its perfect safety and easy management were invaluable desiderata of themselves. Add to this its economy; the cost of the engine itself much less; a mere trifle for the ingredients for working, and the same quantity capable of constant re-use. No time wasted in steaming up; no need of fuel; no danger from fire, and the space and weight of the machine no longer a matter of moment. Anticipating a little in the story, it may be mentioned that the one made of twenty-five horse power worked without noise or jar; was

only fourteen feet long, two and a half wide, and, with the manometer, three feet high. A larger size affording in proportion to power still greater economy of room.

Salomon had taken the models down into his sitting-room, where they remained, and were often referred to in our conversations as we canvassed the details of the invention. Some time afterwards, James F. Mason, of Danville, Ky., brother of the representative in Congress from that district, stopped at the house of the Professor to pay his daughter's music bill. A thunder-storm coming up prevented his leaving, and he passed the night there. Observing the models, he inquired in relation to them, and was told their object, together with the general history of the invention. At the conclusion of the story his interest was so much excited that he offered to become a partner and advance the capital necessary to get up the machines. Salomon at once accepted the proposal, resigned his situation, and raising all the money he could himself, went to Cincinnati, unhesitatingly exchanging the piano for the forge. That such enterprises were among the most costly, all concerned soon found out. Large sums of money were spent, and the most unlooked-for events constantly occurred to retard success. Instead of cast-iron globes, as Salomon had first projected, he was persuaded to substitute bronze; and when all was ready, and the machine confidently expected to work, no sooner was the generating globe charged, than the water of the sulphuric acid was sent in all directions through its pores, as if it had been made of tissue paper. This rendered necessary a delay of several weeks, and entailed much additional expense. So frequent were the disappointments and so onerous the charges for carrying on the work, that after an expenditure of several thousand dollars, his first partner retired, to be succeeded by others, who in turn gave way. Still, while all around him were completely disheartened, he worked on with the most undaunted perseverance and assurance of success. At last, all was ready again, and a large number of spectators waited as before to witness his discomfiture. After the machine was charged, he remained in breathless anxiety for the result, and when the piston did actually work and the fly-wheel revolve, burst into tears of joy.

The following account of the experiment is taken from the *Cincinnati Chronicle and Atlas*, and will fitly conclude the story. I have not seen or heard from the Professor for some two years, and so can give nothing direct. I therefore conclude, sincerely wishing that he may succeed as he deserves to do, and be more fortunate, in a pecuniary sense, with this than his many other inventions:

"The motive power is obtained by the generation and expansion, by heat, of carbonic acid gas. Common whiting, sulphuric acid, and water, are used in generating this gas, and the 'boiler' in which these components are held is similar in shape and size to a common bomb-shell. A small furnace, about the size of one of Dodd's Parodi hats, with a handful of ignited charcoal, furnishes the requisite heat for propelling this engine of twenty-five horse power. The relative power of steam and carbonic acid gas is thus stated:

"Water at the boiling point gives a pressure of fifteen pounds to the square inch. With the addition of thirty degrees of heat, the power is double, giving thirty pounds; and so on, doubling with every additional thirty degrees of heat, till we have 3,840 pounds, under a heat of 452 degrees—a heat which no engine can endure. But with the carbon, twenty degrees of heat above the boiling point give 1,080; forty degrees give 2,160

pounds; eighty degrees give 4,320 pounds; that is, four hundred and eighty pounds greater power with this gas than four hundred and fifty-two degrees of heat give by converting water into steam.

"Not only does this invention multiply power almost indefinitely, but it reduces the expense to a mere nominal amount. The item of fuel for a first-class steamer, between Cincinnati and New-Orleans, going and returning, is between \$1,000 and \$1,200; whereas \$5 will furnish the material for propelling the boat the same distance by carbon. Attached to the new engine is also an apparatus for condensing the gas after it has passed through the cylinders, and returning it again to the starting-place, thus using it over and over, and allowing none to escape.

"While the engine was in operation, on Monday, it lifted a weight of 12,000 pounds up the distance of five feet perpendicular, five times every minute. The weight was put on by way of experiment, and does by no means indicate the full power of the engine.

"Mr. Salomon will immediately commence the construction of another engine on the same principle, of three hundred and fifty horse power. We expect to see steam entirely superseded by carbon in the course of a few years, for locomotive and mechanical purposes."

WHO PAYS THE DUTY!

MR. WEED, of the *Albany Evening Journal*, in one of his last letters from Europe, offers the following reflections:

"Speaking of iron, by the way, let us extract an expensive moral from the existing state of things. The tariff of 1846, aided by 'cheap iron' from England, having broken down our own manufacturers, we are now, with all sorts of enterprises in hand, wholly dependent upon the English manufacturers. They understand and are taking advantage of this folly. The price of rails has risen, and will continue to advance. Iron is twenty-five and thirty per cent. higher now than it was a year ago. Rails could have been rolled, if our tariff had not been broken down at home, twenty-five per cent. cheaper than their cost here."

The tariff of 1842 produced competition for the production and sale of iron, and under it the quantity made at home grew from 200,000 to 850,000 tons. The tariff of 1846 has to a great extent destroyed competition for the sale of this important commodity, and it is daily more and more producing that effect by closing our furnaces and our rolling mills; and the consequence is now seen in the rise of price of foreign iron. We have already seen an advance in the foreign price equal to that which was asked to be made in the duty, but to that application turned a deaf ear; and the result is now seen in the fact that we pay the duty to foreign iron masters instead of paying it into our own Treasury. Great Britain *must* seek the foreign market at whatever price, and the man who must go to a distant market must pay the cost of going to it, as our farmers and planters so well know. It is a part of the system of British free trade to destroy competition for the sale of cloth and iron, that she may have a monopoly and fix her own prices; and the object of the tariff of 1846 is that of enabling her to carry out her favorite policy of taxing the farmers and planters of the world, by allowing them but one market in which to sell, and one in which to buy, that she may fix the prices of all they have to sell and all they need to buy, as she is now doing in regard to iron. A duty on foreign iron equal to the duty now imposed

by the great monopoly of England, would by this time have carried up the domestic production to a million and a half of tons, making a domestic market for one hundred millions of dollars of the fruits of the earth, to the vast advantage of the farmers, who would then have seen the advantage resulting from an increase of their *customers*, whereas they are now reaping the disadvantage resulting from an increase in the number of their *competitors*, and they would have had iron as cheap as they now can have it.

HOW TO MAKE A SURPLUS OF FOOD, AND TO INCREASE IT BY RECIPROCITY.

OUR agricultural readers will find matter for much profitable reflection in the latest news from the "great grain market of the world." They have perhaps been relying upon famine in Germany to bring their breadstuffs up to a remunerating price. The famine is well established there and elsewhere; but, famine or no famine, the factors of the corn market confidently anticipate that there will be a *surplus*, which must find its way from the northern ports of Europe to Mark Lane. They know that there is always a surplus, no matter how hungry men are, or how little the supply of food is, when they have not the means of purchasing it. There is always surplus food for exportation in countries which permit their people to be pauperized by submission to the policy by which Great Britain aims to maintain the monopoly of manufacturing for the world, and to be the great workshop to which all men must come to sell bread and buy fabrics; in every country which, instead of building up domestic markets by diversifying the industry of its people, is wheedled into depending upon *foreign* markets, and seeking to extend them by encouraging importations. Thus Ireland had *surplus* grain, by the million of bushels, in 1822 and in 1847, when her people were perishing for lack of food, too poor to purchase even diseased potatoes. In the latter year cargoes of Irish wheat were actually emptied into the docks of London by speculators, rather than to depress the market by landing them. Mark Lane understands very well that surplus food means, not more food than a given number of hungry mouths require to maintain life, but simply more food than their willing hands can find work to pay for it with. Mark Lane understands perfectly Daniel Webster's axiom, "Where there's work for the hands there's always work for the teeth," and that where there's not work for the hands, teeth and the good things they ache to grind are altogether *surplus*. Only make men poor enough, and they have plenty of surplus. There is not a large city in the trading world where you cannot immediately discover the precise stage of poverty by watching the variations in the surplus clothing, &c., in the pawnbroker's shop. At the sign of the three golden balls you may always find the barometer of destitution. Thus surplus begets surplus, until the poor victim who found first one comfort and then another superfluous, becomes superfluous himself and dies; and then the little food that he contrived to obtain before he perished is no longer needed for home consumption, and goes to swell the surplus for exportation. So it is that the corn-jobbers of Mark Lane grow fat on Continental famine. It brings grist to their mill; while, instead of being serviceable to the farmer of the United States, his prices are beaten down by the competition of the wretches who cannot eat their own grain, because their governments do not protect them against the delusive theory which Mark Lane preaches under the name of Free Trade.

Just at the time when our farmers are told, as the result of recent ship-

ments to England, that "most of the flour having cost nearly as much on the other (American) side of the Atlantic as it will realize here, *freight and charges have been lost*," they are complacently silent while the class whose business it is to grind and transport wheat ask Congress to grant free admission to that of Canada. The Canadians tell them, "It makes no sort of difference whether we compete with you in your own markets, at the mills of the Merrimac River, for instance, or in the English market, for your market after all is governed by Mark Lane, and its prices rise and fall as the price current of the great grain market dictates." If this be so as a general rule, the more's the pity, and the greater the necessity that our farmers should go to work to produce such action on the part of Congress as that our market for agricultural products shall be no longer regulated by English prices. But even under such a general rule it would be a sufficient answer to the Canadian application to reply: "If it's all the same to us, why it must be the same to you. We are not quite certain about it; therefore we will keep the duties, and you may go to England to compete with us there." It is quite apparent, however, that the Canadians seek access to our market because it is a better one than the English, and therefore that it is the interest of our farmers to reserve this market for themselves. Under the present advices, it is very clear that if we go to England with our grain, we do it at the loss of freight and charges. If the Canadians go, *they* lose the freight and charges. Every barrel of Canadian grain admitted for our domestic consumption makes a barrel of American grain surplus, and drives it to England, to sustain the loss which the Canadian grower would evade. A time when "American flour has been offered on easier terms, but buyers appear to expect a further decline, and refuse to purchase freely," is evidently not the time to increase the stock of American flour that *must* go to England.

There is matter for special notice by the farmers of the Western States, in the fact that Dantzic and Rostock wheat is held with firmness and "maintain their previous value," but their flour (for it is Western, not Genesee flour that goes to England) declines. They are the chief supporters of free trade, and they it was who were allured by the glittering rewards which the authors of the tariff of '46 promised them in the English market. The prize, such as it is, is carried off by the serfs and their masters who raise the wheat of Dantzic and Rostock; the blanks, the loss of freight and charges, with the expectation of a further decline, by our friends at the West, who send advocates of the British monopoly to Congress.

EFFICACY OF COTTON IN PRESERVING FRUIT.—We have been informed, (says an exchange,) by a gentleman who has had practical proof of its success, of a new mode of keeping fruit fresh for the table, as grapes, plums, &c., a long time after they have been gathered. It is simply to alternate them in layers with cotton batting in clean stone jars, and to place them in a chamber secure from frost. A servant in the family of William Morey, Union Village, Washington county, about to visit her friends, secured a quantity of plums in this way, to preserve them until her return. They were found to have kept in excellent condition, long after the fruit had disappeared from the garden. From the hint thus afforded, Mr. Morey, Mr. Holmes, and one or two others, laid down grapes in this manner last fall, and they enjoyed the luxury of fresh, fine fruit during the winter, until the early part of March.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

EXTRACTS FROM THE JOURNAL OF AN EAST TENNESSEAN.

On the 19th of May, 1844, I took leave of my friends in St. Louis, stepped aboard the steamboat *Mary Tompkins*, bound up the Missouri. The scenery upon this river defies the point of my pencil. First a broad sweeping current, with low, level banks; then a point of rocks formed into a bluff jutting out into the stream at right angles with the shore. Two days bring me to Jefferson City, a village rather, covering a *ravine*, in which stands the capital city of the State of Missouri. The Capitol building is of hewn stone, (limestone,) but has a strong resemblance to marble—a square building, with stone jutting cornices, around which I walked, and on which I scribbled, thoughtlessly, my name, address, and date. The bell rung. “*All aboard*” was sung out; pow! pow! pow! The mad steamer seizes the *bone in her mouth*, and proudly dashes the wild current, and in twelve hours hauls in at Lexington, a beautiful village on the west bank, on a high bluff overlooking on the opposite shore the low, level bottom farm of Colonel Moore, formerly of Chucky Bend, Jefferson county, Tennessee. From here, in company with two other gentlemen travellers, I crossed the mad stream, with satchel on my shoulder, and took the track to Richmond, in Ray county; thence striking a course north, 15 deg. west, to Gallatin, on the west fork of Grand river. Crossing this deep, muddy stream, we mounted the green bluffs, pursuing our course over an almost level prairie, without a tree or a bush in sight to relieve the painful monotony; without a road, coursing by a pocket-compass for the Peery settlement, near the north line of Missouri, on the head waters of Grand river, filling our canteens at the occasional little scups we passed; and when fatigued or overtaken by night, after making a meal of cold bread and meat from our wallets, would stretch our weary limbs on the green sod to rest. We were six or seven days performing this march, and nearly every mile of it was over a continuous prairie, with a verdant turf of wild grass, of ten or fifteen inches in height, and most of the way enamelled with wild flowers and a profusion of strawberries. For two or three of the first days the scenery was monotonous, and became painful, from the fact that we were, to use a phrase of the country, “out of sight of land;” to wit, out of sight of any thing rising above the horizon, which was a perfect straight line around us like that of the blue and boundless ocean. The pedestrian over such a discouraging sea of green, without a landmark before or behind him, without a beacon to lead him on or define his progress; weary, weak, and desponding; and when night falls, and he stretches his exhausted limbs apparently on the same spot where he slept the night before, with the same prospect before and behind him, the same grass and the same wild flowers beneath and about him, the same canopy over his head, and the same cheerless sea of green to start upon in the morning. It is difficult to describe the simple beauty and serenity of these scenes of solitude, or the feelings of feeble man whose limbs are toiling to carry him through them. On the sixth day we saw in the distance to the naked eye a speck upon the green, a glass defining it a “tent-cloth,” having seen deer, wolves, gophers, hens, and hogs, (a few wild,) till we scarcely paid more attention to them than cattle in the field at home. At noon, still nearing our white object, stopped for repose, and fed on the most delicious wild plums I ever tasted, upon the bank of a small creek, which we named Plum creek. About 3 o'clock P. M., raising a handkerchief on a staff,

we fired our guns to the number of twenty, and presently saw a man with a cap and pony making towards us in a gallop. An hour elapsed ere we spoke. He guided us to the tent of a friend on the border of the settlement alluded to. This settlement was made up of *Peerys*, and friends from Tazewell county, Virginia. Our first friend I said lived in a tent, and so he did. His wagon-sheet was spread for a lodging-room; his wagon-bed a store-house and pantry; his crop of oats and corn growing in open space, without a panel of fence, hedge, or ditch, to protect it. Here we feasted on warm cakes, (the flour being ground by hand,) honey, milk, butter, cheese, &c., until next day afternoon, when one by one we visited the settlement. Some had built houses; others were making brick, &c. One citizen had erected a frame house; the boards, plank, and other lumber he had entirely shaped out with his axe, and wedge, and draw-knife. Here I saw a house covered with slate-stone, in the wild forest. I saw the great western prairie plough, to which were attached a pair of trucks and twelve yoke of oxen, overturning the maiden soil, which is a black loam, of fertile appearance; though to me the corn was rather low in height, but of a deep-green, healthy color. This settlement is upon the east fork of Grand river. About ten miles below the northern line of Missouri, on this river, is the "Grand River Raft," which I visited—a raft of logs and trees, completely bridging the stream for three miles, over which wagons and passengers may go safely. Here a huge tree upturned, with root on the surface of the water, its boughs perhaps one hundred feet in mud and water, in which position it has been for ages; another, perhaps a cottonwood, two hundred feet in length, one end bored into the bank, the other spiked out like chevaux-de-frise; with a third horizontal. Through the apertures of this raft, which has no doubt existed for hundreds of years, the water sifts its way, and, making a fall sufficient for any machinery, foaming and muddy, glides away. This country is, beyond expectation, now pretty densely settled. After staying several days with these friends, we were conducted to Trenton, in Grundy county, at which place we dug us a canoe, putting our baggage aboard, and explored Grand river to its mouth, where stands the level little town of Brunswick, which carries on a brisk business in tobacco trade and manufacture. Here, at the house of our good friend Keyte, of Keytesville, we stayed till taken by the steamboat *White Cloud* back to St. Louis, arriving at Nashville, Tennessee, the 4th day of July, the day of American jubilee.

A. L. B.

Mill Bend, Tennessee, 30th July, 1852.

TOPPING COTTON.

A WRITER in the *Southern Cultivator* says: It is not the largest weeds or plants that always yield the most lint; and how to augment the growth of the staple, relatively, as compared with the other parts of the plant, is the knowledge which all planters should aim to develop. If we had a field of growing cotton, we should not only experiment in topping a portion of it, but apply ashes (caustic or undipped) to about one or two hundred hills of plants in June. A gill to a plant scattered about over a foot or eighteen inches square, and dug into the soil, might aid much in developing forms and filling them with seed and lint. Guano, and urine, ought to be tried in a similar manner; and lime, plaster, and salt, as well as manure, may be worked in about the stems and needy roots of cotton and corn, when tilled in June.

The art of feeding cultivated plants on scientific principles is in its infancy.

Experiments are much needed to verify or falsify the suggestions of agricultural chemists. All want more light, and all should lend a helping hand to increase or diffuse it. We are not to expect miracles in behalf of improvements in agriculture. Progress is wholly impossible without effort. The pursuit of the farmer has remained in some nations without material change for thousands of years. Cultivators of the soil did not try to improve either themselves or their paternal acres, and therefore no improvement in either was attained. Let our friends be admonished, in a spirit of national progress, that if they stand still the world will not. Indeed, there is some reason to fear that if one refuses to advance with this advancing age, he will be trodden under foot and crushed into the earth as a "cumberer of the ground."

SEXUAL CHARACTER OF THE STRAWBERRY.

CINCINNATI, Aug. 12th, 1852.

To the Editors of the Plough, the Loom, and the Anvil :

THE people in Burlington county, New-Jersey, must be behind the age in the cultivation of the strawberry. You say, "Jason Heritage sold 500 quarts, which formed one picking, and were sold at \$250—fifty cents per quart." The same thing was done in these backwoods twenty-five years ago. One individual now brings 4,000 quarts a day, and is satisfied if he gets seven or eight cents per quart; often far less. Twenty-five years ago we were learned botanists, and held all strawberry plants that bore blossoms perfect in both male and female organs, and raised a *quarter of a crop*. We now hold a different doctrine, and plant one Hermaphrodite to twenty Pistillate plants. We have a new seedling, surpassing all plants that I have ever seen, and one I never expected to see—a plant perfect in both male and female organs, that has for five years produced a full crop of large, perfect, well-flavored fruit. I have never seen one of the celebrated English ones that would average one third of a crop of perfect fruit. I was recently at Newark, New-Jersey, and was at gardens where the strawberry was cultivated extensively for market. They were not informed of the sexual character of plants. I saw several beds of Burns's new Pistillate Pine, with not one perfect berry to fifty blossoms, and the gardener deemed it an imposition. He had no other variety within forty feet. In his principal beds he fortunately, among his Hovey and other Pistillates, had a new seedling Hermaphrodite, raised by my sister in Newark, of which more than one half of the blossoms bore perfect fruit, and the blossoms were so abundant that the quantity of fruit was as large as the roots could render perfect. Strange as it may appear, even in England the true sexual character of the plant was unknown. Mr. Keen, the originator of the celebrated Hermaphrodite that bears his name, discovered that one of his seedlings perfected no fruit. Seeing no stamens in the blossoms, he set one with stamens near it, and the vine bore a full crop. He reported the case to the Horticultural Society, but no further notice was taken of it. In raising from seed, one half are generally wholly defective in female organs, and not one blossom in one thousand will bear a perfect fruit. All require artificial impregnation. It is done by insects. Put one hundred plants in a forcing department of plants, perfect in both male and female organs, and if there be no insects, not one blossom in fifty will bear fruit. In such cases, the impregnation may be made by a brush. Where the air is stirring, it may impregnate a few. Thirty years since, adjacent to our city, an ignorant Ger-

man made a fortune by raising strawberries for market. They were the largest and finest in market, and brought from twenty-five to fifty cents per quart. The same quantity of ground produced five times as much fruit as was raised by his neighbors. I had one eighth of an acre in vines, and went to the Germau to buy fruit. His neighbors picked up the plants he threw on the road, when thinning out his plants, and they proved barren. A chance observation of the German's son led me to suspect the cause. I discovered the sexual difference; made it known. Strawberries went as low as five and six cents per quart, and the German ceased to cultivate them, and raised vegetables; abusing his son, and heaping "*donner und blitzen*" on my head. Hailing from what was once the land of rye flour, I am anxious to see the price of strawberries reduced in that State.

U. LONGWORTH.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

THE LAWS OF HYGIENE. — No. I.

BY JOHN B. NEWMAN, M.D.

THERE is one subject much spoken of, and whose importance is generally allowed, and yet as generally neglected. This subject is Physiology. As necessary, and in many instances more so, than the three R's (Reading, Riting, and Rithmetic) taught in our common schools, it is hardly ever thought of in connection with the minor seminaries of learning. It is only the top and upper portions of the hill of Science that are permitted to be cheered by the rays of the new sun. The colleges and higher academies do teach something about Physiology, but only the few in such cases can be benefited, and these few often learn the laws of Hygiene to find that they have been engaged in habitually violating them, and must pay the penalty. The great mass in our land whose future education, after leaving the common school, must be pursued in colleges bearing the armorial ensigns of the Plough, the Loom, and the Anvil, never perhaps hear of these laws, so necessary to health and fortune, and yet must pay the forfeit of ignorance.

I was last week conversing with a friend, a superior mechanic, and who, working by the piece, is paid according to the amount he performs. He was remarking that his income varied from twelve to twenty-five dollars per week, although he always labored the same number of hours every day. I inquired if the kind of work did not differ. He said no, it was nearly all alike; and yet, strive as hard as he could, it would often take him an entire day to complete what, at a more lucky spell, he could finish by noon. For this difference he was utterly unable to account, and the fact seemed to him very mysterious. "Has to-day been one of your lucky days, as you call them?" said I. "No; I ate too much breakfast, had some headache and uncomfortable feelings about my stomach, and was besides very cross and fretful. It never rains but it pours, and disagreeable things always come in a heap." "When was your last lucky day?" "On Saturday. I did more than usual, and was in fine spirits; in fact, for the whole week was much better, and did more than commonly." "What time did you go to bed last night?" "Past twelve o'clock." "During the week past, what time?" "Never after half-past nine, as I had to get up early in the morning to go with George and take a bath before breakfast. He went in the country this week, and I did not feel like going alone."

"I suppose by this time you know the purpose of my questions?" "I do, but I never thought of that before." He now saw plainly enough that lucky days followed early going to bed, early rising, and bathing, and unlucky days the reverse; and that in a great measure his fortune as well as his temper was in his own power. By a little attention to Hygiene he could increase the amount of his income at least two hundred dollars per year, besides saving the extra expenses that late hours are always sure to entail.

Some years since I made an agreement with a painter about a job of work, and it not having been commenced at the appointed time, went to see him. He said he was behindhand with all his jobs, as two of his men had been attacked with colic, and a third, on whom he relied most, had become palsied; that such things were of course common occurrences with painters, and were always taken into consideration in contracting; the men could only do their best, and colic and palsy seemed unavoidable. The boss was a stout, well-formed man, and, except a very marked paleness of countenance, apparently in the enjoyment of good health. Aware that he had always been a hard worker at his own business, I asked if he himself was not often attacked. 'Never but once, and that some twelve years since, when I went up in the country to finish a job of inside work, and staid a week, sleeping in the house. There was no company, it was very lonely, and so I had an attack of colic brought on by low spirits. I always tell the men that the mind has a good deal to do with the body, and that cheerfulness and pleasant company will ward off any attacks.' On inquiring more minutely into his reasons about cheerfulness, he told me that soon after he commenced as an apprentice he began attending evening school, and when there was no school, went out visiting. The smell of paint would cling to his person so that he had to wash himself all over every evening before dressing, and of course entirely change his clothes. When the period of schooling was over, habit made the change and washing necessary, and he continued the practice, ascribing his exemption, however, entirely to the keeping up of his spirits; remarking, that whenever one of his men became fretful and drooping, it was a sure sign colic was coming on.

I pointed out to this man that he had pursued, unknowingly, the best means of safety in his dangerous trade, as a mere preparation for something else, and how a slight knowledge of the laws of Hygiene would have enabled him to save his men as well as himself, by teaching them the really valuable part of his practice, and that the low spirits and drooping he so much blamed in the poor fellows were symptoms of the disease itself which they could not avoid.

Instances of a similar kind will find their appropriate place in other parts of the present series, the two mentioned showing sufficiently that this kind of "knowledge is power," rendering its possessor capable of realizing the maxim that "time is money." Very few ever think of asking the doctor's advice in regard to the mode of life best adapted to their respective kinds of business. It is time enough to see him, they think, when confined to bed, and even then the most are too *strong-minded* to believe in medicine or medical treatment. He must come only because the family and friends insist upon it, and or the sake of these the patient, martyr-like, bleeds in body and pocket.

After all, no man can hardly be blamed for wanting confidence in the medical profession; there are so many different systems, and each at war with all the rest, that, take at any time the votes of the majority of physicians, and the opinion would be given that if there "were fewer doctors there would be less deaths." Besides this, many believe that the study of medicine leads men

to infidelity, and so there must be something radically wrong about the whole science, which of course would be undeniably true, if when properly pursued such was its tendency. And thus every class and every grade, in turn, weigh the science in the balance and find it wanting.

Does the inquirer turn to the common books on Physiology for information on this subject, he finds himself at once bewildered by countless affinities, and suction, and catalytic forces, and the whole subject inextricably mixed up with Chemistry and Natural Philosophy. Most of the books are receptacles for disseminating the vagaries of the French and German schools. Physiology in itself is simple, as all truth is, and carries its own conviction with it. It is, to say the least, as certain a science, and has as little mystery in it, as has Chemistry, from which it is utterly distinct. Avoiding these objections, it will be the object of these papers to give a simple common-sense view of the outlines of Physiology, and their practical applications in Hygiene, together with the reasons of these applications; commencing with an account of the TRUE HIPPOCRATIC PHYSICIAN, in the hope that confidence enough will be given thereby to cause attention to be paid to his advice. And it is given the more freely, that the writer has long been out of the arena of the profession, and is in no sense pecuniarily interested in its progress.

Never was name more appropriately chosen than that which designated the Healer of Disease by the title of Physician. The term is synonymous with Naturalist, one who studies or governs nature; the latter word being used in its most extended application. The chemist busies himself in his laboratory with finding out the affinities of the atomic particles; the astronomer, from his tower, counts the stars and discovers the laws which regulate their motions; the botanist collects plants and tells their names and habits; the metaphysician, in his closet, studies the mental faculties and their modes of operation: so in like manner the enumeration might be carried out to a great length, showing the confinement of each to his own sphere. But the physician is greater than all, both singly and collectively; for not only must he know what pertains to the business of others, but must make that very knowledge the rudiments of his own art to use for higher purposes. Lest such assertions might seem to border on extravagance, the reader may call to mind, on the one hand, the knowledge of mechanics requisite to the surgeon for the perfect adjustment of a limb after suffering a compound fracture; and on the other hand, the equally necessary lore of the metaphysician, in treating cases of insanity.

Though he does not, like the minister, officiate in the pulpit, yet opportunities are not wanting of emulating the example of his divine exemplar. He must not confine his ministrations of good to the body alone; his work is not fully performed, unless he attends to the soul also. How many times does the man of the world turn from the advice and warning of his pastor, reiterating the old excuse, "I am busy now, but will attend to these things at another time," and there is no help for it? But he cannot thus treat his physician. "Nature points out by unerring indications that death is at hand, and the things thou now valuest will soon be thine no longer. Man, thy soul is required of thee; take heed, and while it is time make thy calling and election sure." No matter what his natural hardihood may be, he must tremble at words like these, and on the awful realities of another world direct, however unwilling, his anxious gaze.

It is the office of the physician to usher into this breathing world the young scion of immortality, and to hear the cry that betokens its first inspiration; and it is equally his office to listen to the last moan of humanity, as he stands

by the bedside while the same spirit, now departing, leaves the dust in which it has abode so many years. From the cradle to the grave his ministration extends, and throughout that long period his presence is imperative in every hour of peril and affliction. It is a part of his daily business to expose his own life, in order that he may render assistance unto others. Infectious and contagious diseases, from which others may shrink without reproof, must be approached and combated by this "friend that sticketh closer than a brother," as a matter of necessity. He may be truly said to carry his life in his hand, trusting in the Lord. The late cholera annals tell how many of this noble band remained at their posts, when to remain and discharge their duties insured almost certain death; and yet with the most unflinching courage one after another stood and fell. It should not be forgotten, too, that such positions are more dangerous and require more courage than the centre of the deadliest carnage on the battle-field; bullets may and do miss, but the unseen arrows of contagion always strike. In the one case, also, there is every thing that can excite and encourage the natural man; in the other, every thing that can depress and restrain.

The love of gain cannot be the inducement to make these sacrifices. No profession is less lucrative, and in none is the work so arduous and unremitting. How often has it been observed that the physician does not begin to earn his bread until he has no longer teeth to eat it? In view of these facts, it has become a maxim of consolation to the profession, that the poor are the best paymasters, for God is their surety. Prov. xix. 17; xiv. 7. Of what other employment can it be said that the *bad debts* are the only sure property? Liable to be interrupted at all hours of the day and night, necessarily irregular in meals and sleep, the physician cannot practise the Hygiene he teaches; if permitted to escape the effects of contagion, he risks life by exhaustion, and is really like the guide-post, which, pointing the road to others, is debarred from the course itself.

THE NORTH AND THE SOUTH.

UNDER the tariff of 1846, the North and the South are contending for the possession of a constantly-diminishing market for cotton goods, and the result thus far has been that the North has triumphed, and has closed a large portion of the mills south of New-England. Competition to sell is the order of the day. Under a proper tariff there would be a growing demand, because the farmers and planters and laborers would produce more and have more to sell, and they would have better prices for what they sold. There would then be more competition for the purchase of the commodities they needed, the effect of which would be, that more labor would be given to the production of them, and the North would gradually find that it could employ itself better in producing commodities requiring more labor than is now required for the production of coarse cotton and woollen cloths, and the North and South would find themselves gradually making a market at home for their food and their wool. As a specimen of the quantity of labor that may be absorbed in the production of things that appear to be trifling, we give the following account of the manufactures of Waterbury, Mass.:—

"Has your father or grandfather got a pair of old gilded epaulettes not marked 'Waterbury?' Open your jack-knife, and see if 'Waterbury' is not cut into the blade. Turn over a large ancient, or small modern gilded, or even yellow button, and

'Waterbury' can be spelled around its margin. Look at your wife's—I mean—no matter—hooks and eyes, and see them grin 'Waterbury,' as they pull hard at each other. There's the end of your cane, the bits in your horse's mouth, the tool you curry him with, the metal trimmings of your umbrella, the lock of your trunk, and all the unthinkable little bits of metallic civilization, comfort, and ornament, that ever were used or seen, hailing from 'Waterbury.' Only think of a five-story brick building, covering more ground than Greenfield Common, all full of heavy and light machinery, costing anywhere from twenty to fifty thousand dollars, with fifty men and boys making *suspender buckles*! Go to another, where steam puffs off from a thirty-horse engine, and you hear a roaring and crashing, as if fifty thousand trip-hammers were pounding the Rocky Mountains, and you find stout men very busy in getting out those sixpenny pieces of iron that tip the ends of the handles of cheap knives and forks. There is another concern hissing and snapping, with its \$5,000 worth of machines that pull in long coils of wire, and turn out the *eyes* used in the wood and horn buttons—nothing else. And so you may go from one great shop to another, till you break down in utter amazement at the millions so profitably invested in manufacturing just nothing at all."

THOUGHTS ON THE CULTURE OF COTTON.

PERHAPS we cannot do a better service to our Southern readers, than to give the substance of an article entitled as above, by Mr. A. W. Dillon, Sumter county, Alabama, in the *Southern Cultivator*. The writer says:

Experience proves beyond cavil the folly of adhering to the old system of culture, when it has lost its adaptation to the seasons. It is a historical fact, that countries become colder as the primeval forests are cleared up and the land put in cultivation. This is true of the seasons in the cotton States. Our climate is annually changing, and approximating to that of North Alabama. Planters are now exposed to mishaps which were unknown to them ten years ago. This spring may be regarded as a type of future seasons, and as showing the numerous trials and drawbacks to which farmers will hereafter be subjected; yet I by no means design to be understood as saying that it will be exactly similar in all respects. There is diversity in all animate and inanimate things; and there is a marked diversity apparent, when we compare two seasons together. The past winter was remarkably cold, but about the middle of February the weather became serene and mild; vegetation was rapidly developed, and planters pushed forward their preparations with emulous eagerness. They planted corn in defiance of the experience of the last few years, and until the 17th of March they seemed to have adopted the wisest course, as the weather was balmy, and the corn thrifty and growing. But the wind shifted round to the north, the weather became bitingly cold, and the ground was completely frozen. Since that time we have had an occasional spell of good weather, whose influence on the crop was neutralized by heavy rains, accompanied with both wind and hail.

Is it not strange that men, whose success is so much dependent on the seasons, should be content to plod on without any effort to note the changes of the seasons? Were they to note the period when vegetation developed itself, mark the various drawbacks that occurred from seed-time to harvest, and contrast one year with another, it does seem to me that they might escape many vexatious disasters, and raise larger crops. We would pronounce a farmer who should plant corn in Virginia in February a fit subject for Bedlam; yet, notwithstanding the seasons have been so materially changed even since 1840, there are those among us who conceive that they would be irreparably ruined, were they not to plant corn before the first of March. Is there any more rationality in their course than that of the Virginia farmer? Let

the repeated destruction of their crops by frost declare the folly of such a system.

I assume, as a fair deduction from the previous observations, that cotton ought not, even where the land is prepared, to be planted prior to the 5th or 6th of April. As a general thing, the spring rains are over by this time, the ground becomes warm enough to make the seed sprout in a few days, and the weather balmy enough to make it grow off just as soon as it comes up. I hail it as a favorable omen, that this opinion, once so much scouted, is gaining ground, as year after year shows that late planting is more certain to secure a good stand of cotton, and that the cotton is less liable to be stunted by bad weather, or destroyed by insects. Nor should the ground be prepared too soon where there is abundance of team, as it then becomes weedy, and is covered with a hard incrustation, before the cotton gets up. In such a case, the land has to be thoroughly broken up anew, before the cotton can grow off, or the land be worked to advantage. For verification of this fact, if any were necessary, I might appeal to the personal experience of every observant farmer.

Just as soon as the cotton is well up, the harrow should be run close to the drill, and a sweep put behind it to reopen the water-furrow. Harrows are preferable, because they are not half as apt to cover up cotton as sweeps; they sift the dirt among it better, drag the clods and stalks from the cotton, and leave the ground in admirable order for subsequent working. Deep ploughing in light and porous soils is too exhaustive of the nutrition which feeds the plant, and on that account should never be attempted, unless in very wet seasons. In weedy land, or where a hard crust is apt to be formed on the bed, it is best to run the bar of a turning-plough close to the cotton, and throw the dirt into the water-furrow. This mode of ploughing greatly facilitates "chopping out," and renders the land loose and pleasant to cultivate during the rest of the season. We rarely bring cotton to a perfect stand the first working, unless the weather is peculiarly mild and serene; but from the 1st of April to the 5th of May we thin it in accordance with the fertility of the land. It is generally agreed that late ploughing makes cotton "shed off" the bulk of the squares and blooms which it may have on it.

All schemes for regulating the price of cotton are idle and visionary, and in all probability would produce a reaction as distressing as the evils which were designed to be cured. Liberal sentiments, moderate duties, and a fair interchange of commodities, will be found more conducive to the maintenance of remunerative prices than all the wild schemes that have been suggested. The only feasible way of preventing a depression in the price of cotton is, to diminish the amount of the crop; yet the certain success of such a diminution of the crop by no means helps us in the solution of the original difficulty; inasmuch as neither eloquence nor self-interest can induce men to forego present gain for a remote, prospective increase of their incomes. Their minds have so long been taught to look upon "a bird in the hand as worth two in the bush," that they seldom look beyond the present. Exhausted nature will necessitate a curtailment of the cotton crop, and force farmers to seek out new channels of profit.

The prurient itching of many farmers to be rich, has blinded them to the ruinous effects of their careless mode of cultivation, and left them neither inclination nor leisure to restore their worn-out lands. If this mode of culture is persisted in, lands which now yield a fair crop of cotton will be hopelessly exhausted; the country will be prematurely worn out; our population will rush to new States, in search of richer land; and every branch of trade will

decline and languish. The reflection is melancholy; but we are assured that it is well founded, whenever we pass a field which has been exhausted beyond resuscitation. "What shall we do?" is now the engrossing question with planters. How are our impoverished lands to be restored? These are questions of vast import to farmers, and need no gew-gaws of rhetoric to commend them to attention. If they would not bequeath to their children barren, worthless lands, it is full time for them to begin the work of restoring them. We must alternate our crops, sow small grain on worn-out lands, husband barn-yard and stable manure, and apply it to a small lot of land every year until all is manured, and be always on the watch for gullies and stop them in season. We need agricultural papers to disseminate correct principles; explain the utility of new improvements; explode hoary fallacies; to snatch agriculture from the slough into which it has fallen, and elevate it, in spite of clogs, to its legitimate position in society. We need county societies, to beget emulation among us, by bestowing encouragement on skill and management in all the branches of agriculture, and to familiarize us with each other's mode of culture.

SHEEP.

WE find good counsel in the *Culturist and Gazette*, in relation to sheep. The writer says: The profits from wool are small enough to demand the best care and the most careful management on the part of those who are thus engaged. Some points in sheep management are yet in question among good shepherds. Others we suppose are settled. Among the latter we would mention a few:

First, sheep should never be permitted to grow poor in the fall. As the feed begins to be short and frost-bitten, sheep need great care. The farmer finds himself in trouble. He wishes to spare his hay mow as long as he can, and, indeed, so long as the ground is bare, his sheep will not eat hay well, unless shut up and kept from the grass. Sheep often lose an amount of flesh in two or three weeks between grass and hay, which is not restored during the winter. But what shall be done? Give them the best feed you can, and if consistent with your concerns, put them in the yard at night, if at all cold or stormy, and in the morning give them a little of the best hay you have, or a few oats, and after they have eaten turn them out again. Just remember at this season they need care and attention, and your own good judgment will probably suggest the way.

After the winter is fairly upon you, we suppose it settled policy to separate your flock into smaller parcels, according to their kinds. Lambs and yearlings require about equal care; the yearlings certainly not less. Their teeth are often loose so as to trouble them about eating. These two grades may be put together, or if the number of both kinds amounts to some seventy-five or a hundred, they should be separated, putting the stronger of each age into one parcel and the remainder into another. Strong, heavy sheep should also be separated from the ewes. Another axiom in reference to sheep is, never let a sheep grow poor in winter: of all the animals we ever attempted to recruit, where there was not actual disease, the poor sheep, as the weather grows warmer in the last half of March, is the worst. If you do not feed grain, they will probably go down. If you feed grain, it seems to relax and make them weaker, rather than stronger. The best remedy is to keep them from getting poor. If your hay will not do it, add grain enough, and a very

little, you will find, if you begin in season, will be enough to accomplish the object. You will get your pay in wool, in flesh, and in the saving of care and labor. If you find poor sheep on your hands in the middle of February, go about their improvement. Do not expect you are about to make them fat and lively. That you cannot do until the grass grows again. But by a few oats every day, and good care, you may hold them where they are, and perhaps gain a little each week; but if you crowd grain, with a view of recruiting them rapidly, the crows will fat faster than your sheep.

The size and strength of the fibre of the fleece varies in exact ratio with the condition and keeping of sheep. Starve a flock for a month, and the fibre is weak and worthless, and no improvement in the keeping of the sheep afterwards will be of any avail in improving that growth. But with each change in the amount of care bestowed on the flock, there is a record incorporated into the fibre of the wool, which no art can correct or conceal.

TO EXTIRPATE SORREL.

AN exchange gives the following directions :

The presence of sorrel indicates an acid soil. It is a sour plant, and thrives only on such lands as are destitute of calcareous matters; consequently, the application of the latter in sufficient quantities to correct the acidity suggests itself as the most effectual method of getting rid of it, and rendering the soil fit for profitable cultivation in other and more desirable crops. Yet the quantity of soil of which this plant is naturally produced precludes the hope that it will ever be entirely eradicated, and it hence becomes a part of farming to know in what manner it can be most successfully economized, and rendered valuable as an article of animal sustenance or food.

There are, indeed, but few vegetables, however mean and valueless they may be considered, which do not possess some quality capable of redeeming them from the hasty yet common charge of utter worthlessness, and of this order we regard sorrel. As a food for horses and sheep it not only possesses considerable value, but if chaffed and mixed with meal, it will fatten them as readily, perhaps, as English hay prepared in the same manner. Fed to these animals in its natural state, and without any accompaniment, it is found to retain them in health and heart, and the seed ground and made into "mush" is said by those who have had experience in feeding it to be equal to Indian corn. Yet no farmer will ever cultivate sorrel as a farm product. It is exhausting in the extreme, and it is only when it obtrudes itself on him, spontaneously, that he should endeavor to render it of any account.

The only effectual method of extirpating it is to sweeten the soil by liming, or to increase the staple to a degree which will promote the development of a more valuable herbage, and cleanse the soil thoroughly by succession of manured crops, such as corn, potatoes, or some other vegetable which is cultivated exclusively with the hoe. The seed of the sorrel is not abundant, but it is invested in an integument, or horny involucre, which possesses the power of preserving the vital power unimpaired for years, when placed by circumstances so deep in the soil as to be beyond the influence of those vitalizing principles upon which germination is found mainly to depend.

This peculiarity of the seed explains why sorrel so often appears after long pasturage, and the disappearance of the plant from the surface of the soil where it has previously grown.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

ENGLISH AGRICULTURE.

PREPARING WHEAT FOR SOWING, AND THE VARIOUS KINDS RAISED.

THERE is no labor in respect to which an English farmer is more careful than in the preparation of wheat for sowing. It is a prevailing opinion that, without the usual method there adopted, smut is generated; and from observations I have made, I am disposed to think there is some foundation for that idea. Salt, lime, or ashes, with strong ley, are articles generally used. These are mixed with the grain the evening before, that the wheat may be well saturated with them by the next day, when taken into the field.

In selecting grain for sowing, great attention is paid to the cleanliness and quality of it, and it is not often that a farmer will sow the same stock above two or three years. White wheat is considerably grown, which is a beautiful, thin-skinned, delicate berry, and much prized by millers, but it is a most difficult thing to keep it from becoming mixed with other grain. Bearded wheat, called rivet wheat, is considered much inferior to other grain. It is generally grown on poor soils, or upon lands that have lain fallow during the summer season, and always brings a lower price at market. The flour is of a darker color, and the berry larger than that of other wheat. There is a species of black oat grown there, and to preserve it free from a mixture of white great pains are taken. I have known a farmer have his seed picked over by hand, that he might have it pure.

BIRDS DESTRUCTIVE TO CROPS.

In seed-time some birds injure the springing crop, when it first appears above ground, especially the rook; and boys with a pair of wooden clappers are constantly employed about the fields to prevent their depredations. The rook is similar in color to the crow, but not so large. These birds are encouraged by some of the farmers to build their nests and breed near the house, or farm buildings. Such a collection is called a rookery, and sometimes a thousand and upwards of these birds thus congregate and form a large colony. Whether the good they do in destroying grubs and other things injurious to crops counterbalances the destruction these creatures would effect, is a problem yet to be solved. Certain it is, that if not watched at seed-time and harvest, the rook would make terrible havoc among the grain.

There are two species of the sparrow in England, the house and the hedge sparrow. The latter is rather a scarce bird, and not so injurious to the farmer as the other. The former congregate in large flocks upon the hedges, towards the fall of the year, and are very destructive to fruit and other products.

VARIETIES OF SINGING AND OTHER BIRDS.

Among the feathered tribes in the mother country there is almost every variety of color, although perhaps not so splendid as with us, but their melody is much superior. The music of birds in a grove, of a summer's day in England, has no parallel here. The sorts that are trained for singing in cages are the goldfinch, the bullfinch, and the gray linnet. A cross-breed of these with the canary makes most excellent songsters. The robin is about the size of the sparrow, and sings early in the spring, late in the fall, and often in mid-winter. When young, the breast is speckled, but becomes red when it moults.

The blackbird and the thrush have a most delightful note, which is heard very early in the spring, even sometimes in the month of February. The nightingale is a small brown bird, very difficult to be seen, and heard mostly in the woods by night, which circumstance has rendered it so noticeable by poets and bird-fanciers. This songstress is never heard in the southwestern counties. The cuckoo is a species of hawk, and its note, although monotonous, adds greatly to the interest of rural scenery. There is a mystery about this bird which naturalists as yet have been unable to solve. It builds no nest of its own, and is supposed to lay its eggs in that of some other bird, and is thus thought to be hatched and nourished by a foster-parent. It is about the size of the sparrow-hawk, its feathers speckled and rather pretty. Where it goes in July, or whether it remains on the island, is also unknown. Certain it is, in that month it ceases altogether to be heard. Wild pigeons are not plentiful, but tame ones, in dove-houses, are reared by the farmers much more plentifully than among us.

RABBITS, WOODS, POACHERS, AND THE MOLE.

The rabbit, in England, is now brought under the game-laws, and people are subject to the same penalty for killing it without a license, as they are for a partridge or a hare. Rabbit warrens are preserves for this creature, where it can burrow and breed for the pleasure and gain of the land-owner. Poachers destroy more of these animals than any other game, in consequence of their being more easily ensnared, or hunted out of their holes by ferrets, or tracked in the snow. A poacher is one who makes it his business to take game without a license. Many of them are lazy, degraded beings; while others are of a revengeful, violent temper, and not unfrequently conflicts by night take place between them and the preservers of game, which end in blood, and sometimes even in death.

The woods of England abound principally with oak, some of them immensely large, but it is a wood of a very firm and durable nature. There are also the elm, ash, beech, and maple. Timber there, of course, is extremely dear, compared to what it is with us. Tops of trees are never suffered to lie and rot away upon the ground, and the smaller parts are always bound up in fagots and sold, from four to eight English pence each. Bark, perhaps, is worth double what it is here, and is a commodity that the farmer greatly prizes, as it is always marketable. Great attention is paid to the raising and preserving of timber trees in England, which add greatly to the wealth and beauty of the country. The white walnut, a different tree from that which grows here, thrives well there, but it is not found wild. It has a thick green shell, not a hard inner one, and is completely filled with a delicious white meat. The common hazelnut is found wild, and the filbert grows well, and bears a fine large fruit.

The mole is an enemy the farmer has to contend with, and he is at considerable expense sometimes to keep them from increasing. There are regular mole-catchers, who take them by traps, and are paid either so much per head, or by the year.

The music of frogs, of which we hear so much in the spring, is not heard in England, as those creatures are not so numerous. The tree-toad, as well as the harvest-fly, are unknown.

FLOWERS—FARM-HOUSES.

Perhaps the flora of the mother country is not quite so splendid as with us; but owing to the mildness of the winter and the coolness of the summer

months, flowers bloom earlier, and last longer. In February the primrose appears; and even before then, sometimes the wild coltsfoot opens its yellow portals. Evergreens, and several species of the pine, have been imported into the country, and are seen to ornament not only the mansion of the aristocrat, but also to adorn the premises of the farmer.

There is a nicety and neatness about the dwelling of the English farmer which we look for in vain here. The grass in the front yard is never allowed to grow long; while the path is neatly gravelled, and beautiful flowers, with roses or jessamine, overhang the doorway. The bee-hives are neatly made of straw, and a neat wooden shed in a snug corner is erected to preserve them from the weather. The farm-yard is generally inclosed by buildings, or a brick wall; but among these you find neither the corn-crib nor the smoke-house. There is always a cistern sunk and well cemented, to preserve all the wash for hogs, and into which is always put a certain quantity of grains brought from the brewers.

GRADES OF FARMERS.

Farmers in England may be divided into two classes—the gentleman farmer, and the working. The former are generally the higher class of society, never inured to hardship or labor. They are men of education and refinement, and from these are chosen the magistrates, jurymen, and parish officers. They do but little manual labor, except in the very busy seasons of the year. They belong to the refined part of the community, and may be called the yeomen of the country. The other class are individuals who cultivate perhaps the paternal lot, or one that is hired, with their own hands. These are a hardy race, and often have to struggle through a long course of toil and hardship to retain their possessions. This class of farmers have not much chance to rise in society, except they take their chance in some city, or elevate themselves through the favor of some friend or relative. The various grades of society in the mother country are separated by a caste, one being excluded from another, and every man is supposed to know and to keep his own place. Servants generally remain servants, and are born and brought up with that idea, and are generally contented.

AGRICOLA.

Madison, N. J., Aug. 23, 1852.

FOR THE PLOUGH, THE LOOM, AND THE ANVIL.

REMARKS ON REARING FOWLS.

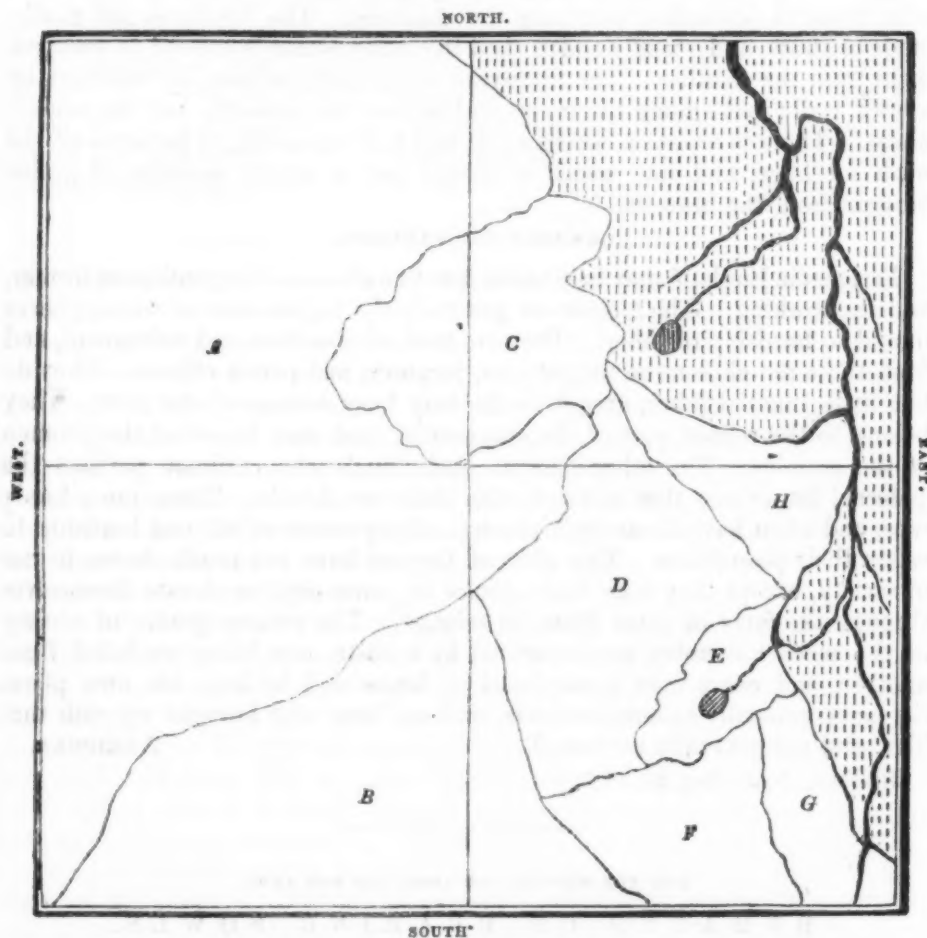
BY CHAUNCEY GOODRICH, VAN BUREN, N. Y.

DEAR SIRs:—It affords me much pleasure to be able to give you, though but imperfectly, the result of my observations on the subject of raising fowls. My opportunities have extended over a wide field, and I have endeavored to improve them by a minute and critical examination of all the circumstances connected with the process of raising poultry, as practised in this vicinity; and although I have no where seen any thing like an approximation to a proper system, I am yet of opinion that, dispersed throughout the whole, I have seen, and had suggested to my mind, nearly all the facts necessary to the maturation of a practical and successful plan for rendering the business of fowl-growing a source of certain and satisfactory profit.

For the sake of communicating what I wish to with the least possible cost of time and space, I have endeavored to classify the several facts, giving only a brief outline of the things necessary to constitute a good "*Hen-Park*."

1st. *Soil*.—The variety of soil included in a “*Hen-Dairy*” should be such as would afford the best varieties of vegetable and animal food in abundance, which implies the necessity for a considerable variety of soil. Such localities should be, therefore, selected so as to embrace suitable proportions of rolling, flat, swampy, and shaded grounds. If possible, have a living spring or brook included, with suitable extent of shrubbery on both wet and dry parts of the park. See diagram.

DIAGRAM, No. 1.



Description of Diagram.—*A* is intended to be high and level on the outer boundaries, descending easterly, and is sand and gravel. *B* is high and level, a black loam. *C* is low, and descends towards the east; mould and gravelly soil. *D* is rolling, and descends towards the east. *E* is low and flat, and is clayey. *F* is high, and descends towards the north and east; a sandy knoll. *G* is low and flat; a rich mould. *H* is low and flat, descending towards the northwest. *I*, the dotted portion on the eastern side, is high at the outer boundaries, descending towards the west; a tract of spongy muck.

2d. *Form and Position*.—The best form is that which approaches nearest to a square, in order that departments sufficient for different occasions and emergencies may be conveniently provided. Position, especially that which relates to surface as presented to the sun, and to give facility to movement or retention of waters, is of the highest importance. The principles involved in the matter of the position of a park, are such as relate to proper temperature

and degrees of dryness and moisture. Such lands, therefore, as afford a great variety of high, low, and medium conditions, and such as embrace a suitable variety of northern and southern, eastern and western aspects, are to be preferred.

3d. *Arrangement of Departments.*—The essential circumstances to be regarded in the arrangement of the divisions are such as will secure the best facilities for operating such changes as the habits of the particular varieties of fowls require, and for meeting the contingencies of the weather, and the changes of the season. In hot and dry weather they would require cool and moist situations; and in wet and cold, or dry and cold, such opposite situations as would best counteract the influence of those extremes—wet and cold requiring high but sheltered places; dry and cold, low and sheltered ones, &c.

The general ground upon which different apartments may be required rests upon the nature and habits of fowls. Frequent change is well known to conduce to their prosperity. In addition to this fact, change is absolutely necessary, in order to counteract particular habits; such as predisposition to incubation, and likewise for the sake of promoting such excitements as arise from change of companionship, and variety of food, and for securing a healthy and vigorous condition, &c.

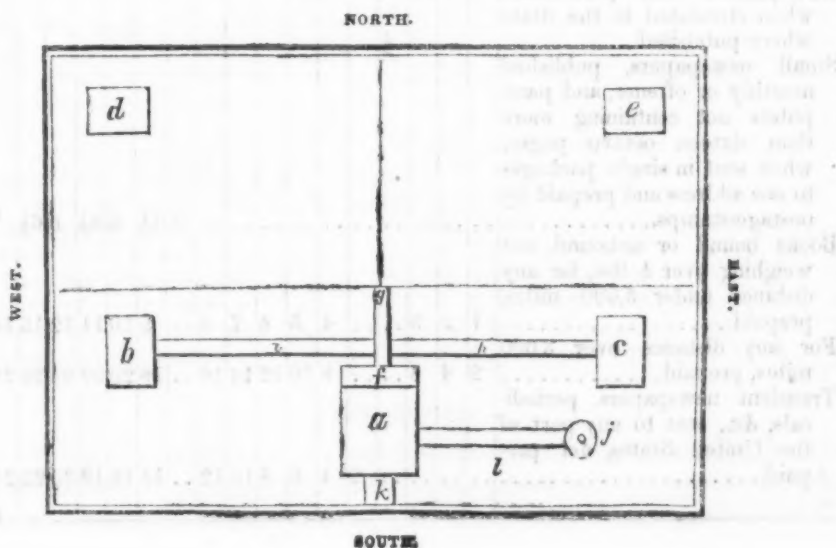
The main apartments may be equal in size, and should not be less than four in number. Minor divisions will be spoken of under the head of fixtures.

The four main apartments may be obtained by dividing the entire park into that number of equal divisions.

4th. *Manner of Inclosure.*—Inclosures subserve two fundamental principles—for restraint and protection. The methods of inclosure should therefore correspond to these purposes. High and tight walls should be adopted for those departments designed for security against cold and bleak seasons; and as a general rule, humanity towards the brute creation is promotive of economy and profit.

5th. *Fixtures.*—Fixtures, whether many or few, should be such as tend to aid in the promotion of the several particulars referred to under the foregoing heads. A great variety of minute details, not enumerated above, may be also worthy of attention in the supply and arrangement of fixtures, including as I do, under this head, all the necessary buildings. See diagram No. 2.

DIAGRAM, No. 2.



Explanations.—*a.* Main barn, with an underground story. *b, c.* Wallowing baths, with underground basements and glass domes. *d, e.* Scudding-houses, with turf sides and roofs, and latticed ends. *f.* Basement for roosting. *g.* Lane to back lots. *h, i.* Covered lanes to wallowing baths. *j.* Spring and small yard, secured from frost in winter. *k.* Entrance to the main barn. *l.* Covered way to the spring, for winter.

THE NEW POSTAGE LAW.

THE subjoined Postage Tables have been prepared at the Post Office Department, and are believed to be correct. It is expected the United States and Prussian Postal Treaty will be returned executed in the course of a few days, when a general Postage Circular, with more full instructions, will be prepared and sent to Postmasters.

POSTAGE ON PRINTED MATTER.

Rates of Postage to be charged upon Newspapers, Periodicals, Books, unsealed Circulars, and every other description of Printed Matter, transient or otherwise, from and after the 30th September, 1852.

	Weighting 1 oz. or under.	Over 1 oz. and not over 2.	Over 2 oz. and not over 3.	Weighting not over 1½ oz.	Weighting 3 oz. or under.	Over 3 oz. and not over 4.	Over 4 oz. and not over 5.	Over 5 oz. and not over 6.	Over 6 oz. and not over 7.	Over 7 oz. and not over 8.	When weighing at least 8 oz.	Over 8 oz. and not over 9.	Over 9 oz. and not over 10.	Over 10 oz. and not over 11.	Over 11 oz. and not over 12.	Over 12 oz. and not over 13.	Over 13 oz. and not over 14.	Over 14 oz. and not over 15.	Over 15 oz. and not over 16.
	cts	cts	cts	cts	cts	cts	cts	cts	cts	cts	cts	cts	cts	cts	cts	cts	cts	cts	cts
Newspapers, periodicals, unsealed circulars, or other articles of printed matter, (except books,) when sent to any part of the United States.....						1	2	3	4	5	6	7	8	9	10	11	12	13	14
Newspapers and periodicals, when circulated in the State where published.....				1															
Small newspapers, published monthly or oftener, and pamphlets not containing more than sixteen octavo pages, when sent in single packages to one address and prepaid by postage-stamps.....											4 4½	5 5½	6 6½	7 7½	8				
Books bound or unbound, not weighing over 4 lbs., for any distance under 3,000 miles, prepaid.....	1	2	3			4	5	6	7	8		9	10	11	12	13	14	15	16
For any distance over 3,000 miles, prepaid.....	2	4	6			8	10	12	14	16		18	20	22	24	26	28	30	32
Transient newspapers, periodicals, &c., sent to any part of the United States, not prepaid.....					2	4	6	8	10	12		14	16	18	20	22	24	26	28

DIRECTIONS.

1st. Transient matter, to be entitled to the benefit of the rates first above mentioned, must be prepaid at the mailing office. If not prepaid, it is subject to double said rates.

2d. Small newspapers, &c., when sent in packets of less than eight ounces, must be rated singly.

3d. Books, sent unpaid, are subject to a postage of fifty per cent. in addition to their prepaid rates.

4th. The weight of newspapers, periodicals, or other printed matter, must be taken or determined when they are in a dry state; and when the weight of any book or other publication exceeds one pound, the same progressive rates, above laid down, must be charged.

5th. Newspapers, periodicals, magazines, or any other printed paper or matter, must be sent without any covers or wrappers, or in covers or wrappers open at the ends or sides, so that the character of the matter contained therein may be determined without removing such wrappers.

6th. In case there is on or in any newspaper, periodical, pamphlet, or other printed matter or paper connected therewith, any manuscript of any kind by which information shall be asked for, or communicated in writing, or by marks or signs, or the directions herein prescribed are in any other respect not complied with, the same becomes subject to letter postage; and it is the duty of the Postmaster to remove the wrappers or envelopes from all printed matter, not charged with letter postage, for the purpose of ascertaining whether there is upon or connected with such printed matter, or in such package, any matter or thing which would authorize or require the charge of a higher rate of postage thereon.

Quarterly Rates of Postage, when paid in advance, on Newspapers and Periodicals sent from the office of publication to actual Subscribers, from and after the 30th of September, 1852.

	Daily.	Six times a week.	Tri-weekly.	Semi-Weekly.	Weekly.	Semi-Monthly.	Monthly.
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Weekly newspapers (1 copy only) sent to actual subscribers within the county where printed and published.....	Free.		
Newspapers and periodicals, not exceeding 1½ ounce in weight, when circulated in the State where published.....	23½	19½	9½	6½	3½	1½	¾
Newspapers and periodicals of the weight of 3 ounces and under, sent to any part of the United States.....	45½	39	19½	13	6½	3	1½
Over 3 and not over 4 ounces.....	91	78	39	26	13	6	3
Over 4 and not over 5 ounces.....	1.36½	1.17	58½	39	19½	9	4½
Over 5 and not over 6 ounces.....	1.82	1.56	78	52	26	12	6
Over 6 and not over 7 ounces.....	2.27½	1.95	97½	65	32½	15	7½
Over 7 and not over 8 ounces.....	2.73	2.34	1.17	78	39	18	9

DIRECTIONS.

1st. When the weight of any publication exceeds eight ounces, the same progressive rate of postage, laid down in the above table, must be charged.

2d. Publishers of newspapers and periodicals may send to each other from

their respective offices of publication, free of postage, one copy of each publication; and may also send to each actual subscriber, inclosed in their publications, bills and receipts for the same free of postage.

3d. Postmasters are not entitled to receive newspapers free of postage under their franking privilege.

4th. If the publisher of any newspaper or periodical, after being three months previously notified that his publication is not taken out of the office to which it is sent for delivery, continues to forward such publication in the mail, the Postmaster to whose office such publication is sent will dispose of the same for the postage, unless the publisher shall pay it; and whenever any printed matter of any description, received during one quarter of the fiscal year, shall have remained in the office without being called for during the whole of any succeeding quarter, the Postmaster of such office will sell the same and credit the proceeds of such sale in his quarterly accounts in the usual manner.

5th. Quarterly payments in advance may be made either at the mailing office or the office of delivery. When made at the mailing office, satisfactory evidence of such payment must be exhibited to the Postmaster at the office of delivery.

ADAPTATION OF CROPS TO MARKET.

THE farmer who is wide awake to his business should watch, as well as follow, the markets. He should know what crops will sell well. So far as he can form a probable or approximate opinion on this point, he should conform his cultivation to it. In some places, he can produce milk to advantage; in others, butter or cheese. Again, he may be so situated that neither of these articles will pay him so good a profit as some others. Here his main crop will be hay, there fruit; here potatoes, there squashes and other vegetables.

A farmer in Beverly, last year, raised on two and a half acres of land 18,000 cabbages per acre, the net receipt of which averaged him \$450. Another farmer, in Danvers, cultivated an acre of land with sage, and realized the handsome profit of \$400. The cultivation of the onion in this latter town gives employment to many hands, and is the source of large profits.

Other examples might be cited to illustrate the importance of adapting crops to the markets, such as the production of the smaller fruits in the neighborhood of cities. It is not the crop on which the farmer himself sets the highest value that should be raised by him, but the crops he can produce at the least expense, and sell to the greatest profit.

Some farmers are fearful of loss, if they diverge from the beaten track. They go on, therefore, cultivating the same products, and often on the same fields, as did their fathers. Other farmers seem to entertain the opinion that unless they raise the heavier products—corn, and potatoes, and grain, and hay—they are no longer farmers, but a sort of market gardeners.

But away with such idle fears and foolish notions! Let our farmers study their true interests. Let them not stand still while others are going ahead. Let them be up and doing something to supply the wants of the towns and cities in their vicinity; and not the necessities only, but the tastes also. Let them raise flowers, even, if it will pay a profit! Why not? The taste for flowers is an innocent and rational one; why should it not be gratified?

There are many articles not yet cultivated to any extent among us, that

may doubtless be raised to advantage. For example, some vegetable product, such as the castor oil bean, might be introduced and raised, to afford an oil for a domestic light, or for mechanical purposes. Whale oil cannot be produced fast enough to supply the demand. Some substitute, drawn from mother earth, will doubtless be soon introduced. Sunflower seed might, perhaps, be found to answer. But we must leave the subject for the present, hoping soon to resume it.

AGRICULTURE IN GERMANY.

A traveller by railroad, from Dresden to Hanover, on the 18th of May, gives the following description of the appearance of the fields on the route of his day's journey: "The country through which we passed is smiling in all the luxuriance of spring. The fields of rape, glowing on all hands with their blossoms of intense yellow, looking as though columns of butterflies had settled down upon them. Most of the lamp oil used in Germany is made from the rape seed. Later in the season, the fields of poppies unfold their blossoms of blushing red. From these seeds an oil of better quality is expressed, used for the table and for other purposes. Poppy seeds are also an important ingredient in some of the varieties of cake so abundantly produced in the German *cuisine*."

In all the protected countries of Europe, farmers are enabled to cultivate a variety of products, and thus it is that their land is made valuable, and that their own condition is improved. In the unprotected countries they are obliged to do as they do here,—confine themselves to the culture of those few commodities that will bear transportation to distant markets, and thus to stake the whole venture of the year upon a single card—cotton, wheat, or tobacco. These they send away, and thus exhaust the land; the consequence of which is, that their land and themselves are impoverished together.

THE LOCUST.

The locust is about three inches long, and has two horns, or feelers, an inch in length. The head and horns are of a brownish color; it is blue about the mouth, as also on the inside of the larger legs. The shield that covers the back is greenish, and the upper side of the body brown, spotted with black, and the under side purple. The upper wings are brown, with small dusky spots, with one larger at the tips; the under wings are more transparent, and of a light brown, tinged with green; but there is a dark cloud of spots near the tips.

There is no animal in the creation that multiplies so fast as this, if the sun be warm, and the soil in which their eggs are deposited be dry.

The Scripture, which was written in a country where the locusts made a distinguished feature in the picture of nature, has given us several very striking images of this animal's numbers and rapacity. It compares an army, where the numbers are almost infinite, to a swarm of locusts; it describes them as rising out of the earth, where they are produced; as pursuing a settled march to destroy the fruits of the earth, and coöperate with Divine indignation.

When the locusts take the field, as we are assured, they have a leader at their head, whose flight they observe, and pay a strict attention to all his motions. They appear at a distance like a black cloud, which, as it approaches, gathers upon the horizon, and almost hides the light of day. It

often happens that the husbandman sees this imminent calamity pass away without doing him any mischief; and the whole swarm proceed onward to settle upon the labors of some less fortunate country. But wretched is the district upon which they settle; they ravage the meadow and the pasture-ground; strip the trees of their leaves, and the garden of its beauty; the visitation of a few minutes destroys the expectations of a year, and a famine but too frequently ensues.—*Library of Natural History.*

LETTER OF GOV. L. J. FARWELL, ON FLAX CULTURE.

MADISON, February 10, 1852.

ALBERT C. INGHAM, Esq.,

Corresponding Secretary of the Wisconsin State Agricultural Society:

Having been honored by your request that I should state my views relative to the introduction into this State of some new, safe, and staple product, adapted to our soil and climate, I take pleasure in submitting the following suggestions, and hope they may prove of some service to the farming interest of the State, in its present embarrassment.

From the information I have derived from others, and from my own observation, I am led to believe that the cultivation of Flax, if adopted as our principal or chief crop, will at this time, better than any thing else, afford us the relief we require.

A good mellow, pulverized soil, that would be suitable for Wheat, Corn or Roots, is equally adapted to the healthy growth of Flax, and especially is our new, and fresh soil, in this State, favorable to its production. The seed should be sown broad-cast about the first of May; from twenty to thirty-two quarts to the acre, if cultivated for the seed only, or if cultivated both for seed and the fibre, one third additional seed should be sown. When sown, it should be lightly and smoothly harrowed or brushed in. In ordinary seasons, it will be fit for harvesting in the month of August, when the seed is entirely and maturely formed, and nearly, if not quite ripened; and may then be secured by pulling, or cutting close to the ground, and after being bound up in small bundles, can be well stacked in the field, or placed under cover. The plant while growing is not liable to injury from frost.

In Belgium, Holland and Ireland, I have known as high as thirty bushels of seed produced to the acre; and I know of no reason why our lands may not be equally productive of this crop.

But, for illustration, I will suppose we raise fifteen bushels of seed per acre, which should be our lowest average crop, and by a simple calculation, a comparison with the wheat crop, and its relative value, will appear.

One bushel of seed will produce two gallons of Linseed Oil, besides the oil-cake. The scarcity of seed in this State at present will probably make its average cost for the next two years, about twelve shillings per bushel, and the lowest cost one dollar. We have this result:

One acre, 15 bushels,	\$15 00
1 1-4th tons fibre, \$8 per ton, (gross,)	10 00
	<hr/>
	\$25 00

Suppose twenty-five bushels per acre are raised, which will be a fair crop

and suppose the fibre, instead of being carried away and sold in the rough state, is dressed by the farmer at his leisure, the result will be:

One acre, twenty-five bushels, at \$1 00,	\$25 00
Three hundred pounds dressed flax, six cents, at least,	18 00

\$43 00

This conclusively shows that the crop will be a profitable one to the farmer, even more so than wheat; but this is not all—the effect of making it a staple and general product upon the country is worthy of special notice.

1st. It will require to be established, in almost every township or village, a Flax-breaking machine, where the fibre may be sold for cash, by the ton.

2d. It will demand the establishment, in almost every settled county, of an oil mill, where cash will be paid for the seed.

3d. A great variety of linen fabrics are manufactured from the fibre, and the seed may be converted into oil, food for cattle, and medicinal articles.

4th. It gives the farmer comparatively a sure and valuable product, that he may always sell at a certain market price for cash, or exchange with the merchant for goods; a staple that may profitably employ his domestic industry in its manufacture into articles for clothing.

5th. It furnishes to the merchants or other buyers in the country, an important and valuable article of export, in the form of Flax and Linseed Oil.

6th. It gives employment to mechanics and other laborers in our own State, in its preparation for market; and in the two articles of oil and dressed flax, will make a balance of trade in our favor of a large amount.

Within the next ten months, the above advantages of this crop may be, in a measure, realized by this State. Ten thousand bushels of seed should, as soon as practicable, be brought here, to be distributed generally among the farmers of the State, at cost, which would amount to the sum of \$15,000. Ten thousand bushels would sow ten thousand acres, which, according to the above average estimate, would produce to the State, in the first year, in seed and fibre, in value, \$250,000.

During the second year, if we could sow one half of the seed of the first year's crop, at one bushel to the acre, for that year, at the same estimate, there would be produced to the State in seed and fibre, in value, \$2,000,000.

Such a result would certainly seem worth securing to the farming interest of this State; and I cannot see what should necessarily prevent, except it be an unwillingness to make the effort.

We have the soil and climate well adapted to this crop, as has been well and successfully demonstrated by actual experiment. We have the farming and mechanical labor already here, to be employed in its cultivation and preparation for market; and we are importing into the State, for our own use, from other States and abroad, the very articles that are produced from it, amounting in all to no inconsiderable sum of money, when we have the facilities to be not only independent, in this respect, but also to produce for exportation. The experience of the farmers in this State has clearly proved that the wheat crop is not always sure; and if a crop, there is not always a good market. Consequently, there is a necessity that at least a portion of our energies should be directed to some other agricultural product; and I know of no plan more feasible or profitable than this. It is a sure crop—comparatively so, at least. It opens and commands a safe cash market. The crop is raised with as little labor, proportionally, as any other, and it can be easily and cheaply introduced at this time.

Some plan could be adopted by neighborhoods, or perhaps by a more gen-

eral concert of action among the farmers of the State, to procure the seed. After the first season, then this difficulty ends, and the crop is introduced into the State; and that it will afterwards become a staple one, I think any person can clearly see.

To show that all this is not mere theory, without experiment or proof, I am permitted to refer to John Galbraith, Esq., of Mequonago, in the county of Waukesha; who has had more experience in the cultivation of this crop than any other person in this country; and who is now, and has been for a few years past, engaged in this enterprise, in this State, at the above place. I am informed, by a letter from him under date of January 9th last, that

In 1848, he raised 20 acres, a good crop.

1849, " 96 " very fine crop.

1850, " 121 " dry season, middling crop.

1851, " 108 " splendid crop.

Mr. Galbraith gives it as his opinion, that this crop is as well adapted to this State as to any flax-growing country abroad; and he has had an intimate acquaintance with those countries, and is capable of judging correctly.

I have examined, with much satisfaction, the flax-breaking machine of Messrs. Hatch & Weed, of Beloit, where they purchase the flax straw by the ton, and it is by them rotted, dressed, and sent to an eastern market. Should the farmers of this country adopt this crop, and use one half the energies in its production now expended upon wheat, the time is not distant when many of our cotton factories will be converted into linen factories, and linen goods be produced as cheaply and be made as generally useful as cotton goods.

Recent experiments in Europe and in our own country leave no longer a doubt but what flax can be substituted for cotton, and there is a process and patent now in use, by which, in one day from the time the flax is pulled, ripe from the field, it can be prepared, and in a fit condition for spinning upon any of the flax, cotton, wool or silk machinery of the country. We have a direct and vital interest in the cultivation of this product.

Most respectfully, your obedient servant,

LEONARD J. FARWELL.

FLAX CULTURE.

MADISON, March 8, 1852.

MESSRS. EDITORS:—Gov. Farwell's letter on flax raising, in the *Express* of last week, has recalled to my mind a conversation which I had last fall with an old friend from Illinois—a farmer and a man of veracity. My friend had purchased a farm, upon which there was a mortgage of \$1,000 due in the fall. It being in the spring, he could see no way of paying the money by raising wheat. For experiment, and with little or no experience in flax culture, he sent to the State of New-York and had seed enough sent on to sow one hundred acres of flax, and contracted to deliver the seed at Dunkirk, in the fall, at \$1.12½ per bushel, a very low price. The crop averaged 12 bushels per acre, was cut with a scythe, and threshed with a common threshing machine. The flax straw sold to an eastern company, as it came from the machine, at \$5.00 per ton. The haste in putting the crop, the cutting with a scythe, threshing, and selling both seed and fibre less than its real value, in order to meet the mortgage in time, made a loss of at least one third what it would have been had it been well cultivated, threshed, and sold at the highest price; but the mortgage was paid with this spring crop, and money left to commence flax culture this year understandingly.

Yours, truly,

Madison (Wis.) *Express*.]

A MEMBER OF THE ASSEMBLY.

FIXED FACTS IN AGRICULTURE.

THE following useful items are going the rounds, and, though without an endorser, are worthy of attention from every farmer :

1. All lands on which clover or the grasses are grown must either have lime in them naturally, or that mineral must be artificially supplied. It matters but little whether it be supplied in the form of stone lime, oyster lime, or marl.
2. All permanent improvement of lands must look to lime as its basis.
3. Lands which have been long in culture will be benefited by application of phosphate of lime, and it is unimportant whether the deficiency be supplied in the form of bone-dust, guano, native phosphate of lime, composts of fish, ashes, or that of oyster-shell lime, or marl, if the land needs liming, also.
4. No lands can be preserved in a high state of fertility, unless clover and the grasses are cultivated in the course of rotation.
5. Mould is indispensable in every soil, and a healthy supply can alone be preserved through the cultivation of clover and the grasses, the turning in of green crops, or by the application of composts rich in the elements of mould.
6. All highly concentrated animal manures are increased in value, and their benefits prolonged, by admixture with plaster, salt, or pulverized charcoal.
7. Deep ploughing greatly improves the productive powers of every variety of soil that is not wet.
8. Subsoiling sound land, that is, land that is not wet, is eminently conducive to increased production.
9. All wet land should be drained.
10. All grain crops should be harvested before the grain is thoroughly ripe.
11. Clover, as well as the grasses, intended for hay, should be mowed when in bloom.
12. Sandy lands can be most effectually improved by clay. When such lands require liming, or marling, the lime or marl is most beneficially applied when made into compost with clay. In slaking lime, salt brine is better than water.
13. The chopping or grinding of grain, to be fed to stock, operates as a saving of at least twenty-five per cent.
14. Draining of wet lands and marshes adds to their value, by making them produce more and better crops; by producing them earlier, and by improving the health of neighborhoods.
15. To manure or lime wet lands is to throw manure, lime, and labor away.
16. Shallow ploughing operates to impoverish the soil, while it decreases production.
17. By stabling and shedding stock through the winter, a saving of one fourth the food may be effected; that is, one fourth less food will answer than when such stock may be exposed to the inclemencies of the weather.
18. A bushel of plaster per acre, sown broadcast over clover, will add one hundred per cent. to its produce.
19. Periodical applications of ashes tend to keep up the integrity of soils, by supplying most, if not all, of the organic substances.
20. Thorough preparation of land is absolutely necessary to the successful and luxuriant growth of crops.
21. Abundant crops cannot be grown for a succession of years, unless care

be taken to provide an equivalent for the substances carried off the land in the products grown thereon.

22. To preserve meadows in their productiveness, it is necessary to harrow them every second autumn, apply top-dressing, and roll them up.

23. All stiff clays are benefited by fall and winter ploughings, but should never be ploughed while they are wet. If at such ploughings the furrow be materially deepened, lime, marl, or ashes should be applied.

24. Young stock should be moderately fed with grain in winter, and receive generous supplies of long provender, it being essential to keep them in a fair condition, in order that the formation of muscle, bones, &c., may be encouraged and continuously carried on.

25. Milch cows, in winter, should be kept in dry, moderately warm, but well ventilated quarters, fed and watered three times a day, salted twice or thrice a week, have clean beds, be curried daily, and in addition to their long provender, should receive succulent food, morning and evening.

26. Full complements of tools and implements of husbandry are intimately connected with the success of the husbandman.

27. Capital is not only necessary to agricultural success, but can be as properly used in farming as in any other occupation.

28. Punctuality in engagements is as necessary to an agriculturist as it is to a merchant.

29. Every husbandman should carefully read and digest matters connected with his business; his success being as dependent upon a full knowledge of its principles and details as is that of the lawyer, or physician, with a knowledge of the science of the law, or physic.

30. Wheat, rye, oats, and barley should never follow each other in a course of rotation; there should always be an intervening hoe crop between them.

31. Weeds should never be permitted to mature their seed on a farm, but be pulled up or cut down as often as they show themselves, such being the only effectual method of eradicating them. To insure this result, the ground should be planted in corn, and that kept clean.

32. Time and labor devoted to the collection of materials to be converted into manure are the most fruitful sources of profit in the whole range of farm economy.

33. The orchard, to be productive of good, fair fruit, requires to be fed, as much as does a field of grain. The soil of each requires that the substances abstracted by the crops shall be restored. The soil should be kept clean and open to the meliorating influences of the sun, the dews, the rain, and the air; the bark of the trees should be kept in a healthy condition by scraping, when necessary, and by alkaline washes.

SEWING MACHINES.

SEWING machines are about to make a great revolution in thread and needle operations. We have seen fine stitching done by them equal to that of the most skilful hands. We are not familiar with many of the patents, but we regard the suggestions below, from the *Scientific American*, as worthy of confidence. We learn that Mr. Wilson is about to adapt his machine to sewing boots and shoes. Referring to other patents, the journal above named says:

"We have nothing to say against any one of them but the Wilson ma-

chine is, in our opinion, a great triumph of American genius. It is no larger than a neat, small work-box, very portable and convenient, and we have seen fine shirt bosoms and collars stitched by it in a more perfect manner than any we have ever seen done by hand-work. When we first noticed Howe's Sewing Machine, in 1847, there was not a solitary machine of the kind in active operation in our whole country, if in the world. There are now, we believe, about five hundred in operation, and we have been told by Mr. Wilson that the orders for his machines cannot be supplied fast enough. There are at present a hundred machines about finished at the company's works—Wheeler, Wilson & Co., Watertown, Conn.—and these are all engaged. At present, until the patent is fully secured in Europe, we cannot illustrate nor describe this improved machine, which has received the name of A. B. Wilson's Patent Seaming Lathe, and was patented on the 15th of last June; but we will do so, perhaps, during the latter part of this year."

THE STATE FAIR.

THIS exhibition of farm and garden products, and mechanical implements, has passed. Immense crowds were present, and all seemed gratified. The address was given, as previously announced, by Hon. Horatio Seymour, and is reported to have been free-tradish. If he can work out the problem of free trade from his own statement of facts, he is a more ingenious man than we have supposed him to be. Governor Hunt and other state officers were on the ground. A detailed statement of the exhibition is necessarily deferred till our next issue; but a few items, which are at hand, will interest our readers.

The articles were arranged as follows: Cattle; horses and mules; sheep, and swine, and poultry; ploughing implements and machinery; dairy, sugar, honey, flour, grain, seeds, and vegetables; domestic manufactures; flowers, fruits, and paintings; stoves, silverware, and discretionary. Of cattle, there were 107 entries, of so many owners; of horses and mules, 75; of sheep, swine, and poultry, 65; of ploughing implements and machinery, 71; of domestic manufactures, 61; of dairy, sugar, &c., 79; of flowers, fruits, and paintings, 43; of stoves, silverware, and discretionary, 74.

The Floral department presented great attractions, and was constantly thronged. Among the more prominent objects of interest was an ornament ingeniously wrought of flowers and pith of flower-stalks, representing Flora on a pedestal of flowers.

A little further on was the American flag, so admirably displayed in waving folds that a little distance would deceive one into the belief that he saw it shaking in the breeze. It was composed of verbenas—the white stripe represented in a very light variety of the flower, the dark stripe by the lively scarlet, the field a delicate purple, and the stars again of the white. A border of evergreens surrounded the stars and stripes, and the whole was set in a frame of golden flowers. Exhibited by A. Fust & Co., of the Genesee Valley Nurseries.

The Syracuse Nurseries of Thorp, Smith, Hanchet & Co. contributed largely.

Fifty varieties of dahlias were exhibited by E. M. Van Alstyne, of Greenbush, Rensselaer county.

In addition to their flowers, Thorp, Hanchet & Co. presented 88 varieties of pears, of which 70 were new; 35 varieties of apples, and 20 of plums.

John Morse, of Cayuga Bridge, had 60 varieties of pears, and a large assortment of most luscious-looking peaches.

Twenty varieties of pears were exhibited by Henry Vail, of Troy. Also, clusters of black Hamburg grapes, weighing from two to three pounds each.

A tent adjoining Floral Hall contained specimens of vegetables.

FLORICULTURE.

CULTURE OF THE CALCEOLARIA.—Cover very slightly, and remember never to allow the surface of the soil to become dry. Cover it over thinly with moss, to prevent evaporation. There is generally great difficulty complained of in getting the seed up. It is generally sown and watered, and watered again when dry, and so on, and probably never comes up at all. The seed, when first damp, begins to germinate, and if it is then allowed to become dry, it is of course killed in the germ. Keeping it constantly damp will obviate this.

THE DAHLIA thrives and blooms best in a sandy soil—too rich a soil making it too bushy. Where the soil is naturally rich, a shovel full of sand put around the tuber will be of great service; and when it is naturally poor, a shovel full of well-rotted manure will be the same. But the dahlia loves water, and when the season is not reasonably wet, it must have artificial watering.

WINTERING TEA ROSES.—The following mode is reported by the editor of the *Horticulturist* as having been entirely successful the past severe winter: One foot of tan-bark, applied to the oval bed late in autumn, nearly covered all the stems, the tallest being bent down. This tan-bark was kept *perfectly dry* by means of three bundles of rye straw, formed into circular radiating thatch, gathered to a point at the centre, forming what a farmer would call a *cap*. Keeping the tan dry is the great requisite.

TRANSPLANTING EVERGREENS.—The roots, while out of the ground, should be kept moist, and they should never, for a moment even, become dried during the process of transplanting. Hence a rainy day is recommended, in all cases and especially where the roots are denuded.

CHICORY is one of the most important agricultural as well as horticultural roots that perhaps nature has ever given us. Every part of it is of great value: top and bottom, blanched as salads; green, for cattle, sheep and lambs; roots, for cattle, as well as for coffee, &c. An English writer says: "I have no doubt that if chicory was largely grown by the cattle and sheep farmers, that much less disease would prevail, and more milk and butter would be produced, and more healthy meat, as it is so fine a bitter and purifier of the blood; and we are well aware that this root is largely grown in Yorkshire, to mix with coffee. It thrives in all soils that will grow carrots, and prefers rich loose land. It may be sown and treated precisely like carrots."

HOW TO IMPROVE POOR SOIL.

THERE is a way within reach even of a poor man. If he will be content to till but little ground, he may have it enriched almost at free cost, by observing the following particulars:

1. Waste nothing. If you have merely a tub of soap-suds, throw it upon your manure-heap. So of rotten chips, the hair carded from your horse and cow, the liquids removed every morning by the *acting* chambermaid, your woollen rags, ashes, lime, or clay, that may be at hand. Get also the oyster-shells that are thrown out as refuse by some neighbor, burn and powder them, and add this to the common stock. Mix in, too, any hay you may have that is worthless as fodder. Pursue this course in the strictest manner, and your land will constantly be improved. Nor should you forget to set all hands, old and young, male and female, as far as convenient, to pluck up by the roots the weeds that infest your grounds, taking care that the seeds do not ripen, and throw these upon the pile. A small armful per day merely will amount to much in a season, and may produce nearly its own weight of grass, or straw, or stalk, and you rid yourself of a pest at the same time. If your land is clay, surely you can mix sand in your dung-heap, and this will do much good, and all this costs a mere trifle.

2. Haul up to your yard a few loads of peat or muck from some swamp; or if this is beyond your reach, collect a quantity of leaves from the forest or elsewhere, and throw these upon the pile. And if you can add charcoal-dust from some neighbor's kiln, you will be a gainer. Doing these things, or as many of them as you can, other suggestions will occur to you, the result of circumstances, which will be equally important. Thus, spent tan is valuable. Can't you get some? This latter, however, is improved by being charred. Thus prepared, the tan is a capital manure for your strawberries, melons and cucumbers, grape vines, &c.

Every farmer should know the general principles of mechanics, or he will be liable to tax himself and his animals, if not beyond their ability, at least beyond his real necessities. Certain applications of these principles are of daily occurrence, and are well understood. Others, equally important, are talked about as speculations only, and are not understood, and yet these may often be of more importance than the former.

We have in our recollection the case of a poor man who by great effort, and a most unwarrantable draught on his pocket, had engaged some ten or twelve yoke of oxen, with almost as many drivers and other sorts of laborers, to move a building. A skilful and obliging friend, seeing his extensive and costly preparations, came to him and advised him of his ill-judged plans. "Send all your oxen home," said he, "but a single yoke, and I will put you in the way of moving your barn, at a trifling cost." This was done. A rope and pulleys (tackle) were obtained. One block was fastened to an iron bar, or a small joist temporarily set in the ground by the aid of the iron bar, while the other was attached to the building, which rested on rollers, which required only a plank to prevent them from sinking into the ground; and by a frequent change in the position of the forward block, as progress was secured from time to time, the task was accomplished for a trifling outlay. A little more time was consumed, no doubt; but less days' work were required, either of men or animals, and a mere fraction of either, to be paid for at common day wages.

Our readers have also been made acquainted, within a few months, with two instances in which skilful farmers have been able to plough ground too soft to bear cattle. Resort was had, in both, to the use of the same contrivance. Pulleys were fastened to some convenient place outside the swamp, and chains connected with them so that the cattle could tread back and forth on solid ground. This was no doubt a less economical expenditure of power than if done in the usual manner, but that was impossible. The problem was, by what means can the work be done? A majority of farmers would never have thought of resorting to such helps; while the result exhibited in both these instances, as in that of moving the barn, was a very profitable job.

The distance of farm labor from the house or barn, by the way, is a matter of great concern. If raising 33,000 lbs. one foot per minute is a horse-power, there is an untold waste of horse-powers in going to and returning from the place of labor, two neighbors or more often meeting each other, seeking for the field where the labor is to be done; and if a horse cannot permanently sustain himself in travelling more than fifteen or twenty miles a day with a heavy draught, as in a stage-coach, how many horses are, in fact, worn out in this preparatory work? Sometimes it is the most arduous part of his labor, being compelled by thoughtless boys, or avaricious men, to make up by increased speed what he is deficient in respect to load. Perhaps he is thus pushed, on a loaded stomach, filled with bulky food, and is thereby materially disqualified for a fair day's work. A large amount of labor is thus lost.

The size of wheels for carts and other carriages is a matter of primary importance, involving the loss or the saving of incalculable expense. All these matters are based on certain principles common to them all, while each brings into action a set of principles peculiar to itself.

The shape of the mould-board of a plough, the application of the draught, the size of the wheels in a two-wheeled carriage, and of each pair in the four-wheeled one, has an interest of its own, while all involve certain other principles in common.

It has recently been stated, in one of the very respectable journals of the day, that by diminishing the size of the axle-tree, power was gained, so that one having a diameter of one and a half inches gave twice the power of one of three inches in diameter. This is a mistake. There is no analogy between these cases and a wheel and axle, while it has been assumed by this writer that the two are identical. But of this by-and-by.

The first point suggested for consideration is this: Power should be applied, if possible, in the direction of the intended motion. This is obvious. If not thus applied, the loss will be in proportion to the angle formed by the lines representing the line of motion and the direction of the power. We speak now of cases in which the actual motion is confined, of necessity, to a single direction, as where a heavy body is on cylindrical rollers, or confined in a groove, or on a rail. It is usual to measure the available and the unavailable power thus exerted, by forming a parallelogram. Drop a perpendicular to the actual line of motion, from the point at which the power is applied, and these two lines will form the base and one side of the figure required. The relative proportion of these two lines shows the power lost. Thus, if the perpendicular is ten, while the base line is fifty, and if 6,000 lbs. are applied as a motive power, the loss of power is one in five. Four fifths of the 6,000 lbs. applied in the line of motion would be equally efficient.

But a different course is sometimes adopted. A rope is fastened to an immovable object, and passed through a block, attached to the weight to be

moved, which is free to move alike in any direction, while the power is applied at the other end, one or both ends of the rope being out of the line of motion. Here again is a waste of power, although the weight may move in the direction intended. In this case the actual line of motion is the diagonal of the parallelogram, of which the block is at one angle, and the two parts of the rope form its base and side. The parallelogram is completed by drawing the other two sides from any point in the line of motion parallel to those already described. The amount of the power lost by this mode of applying it will be in proportion to the base and side as before. Hence, in this form of applying power, the loss is constantly increasing as the weight advances, the attachments of the rope and the point where the power is applied remaining stationary.

It is also obvious that power directly applied against an immovable object is entirely lost. A case of this sort would occur, if a wheel was brought in contact with such an object, the point of contact or of resistance being on a line drawn from the centre of the wheel, in the direction of the motive power. If the point of contact is not in the line thus described, other important considerations present themselves, which we will consider hereafter. Our limited space forbids us to proceed further at present.

SUBSOILING.

A WRITER in the *Southern Cultivator* gives the following as his own experience on this important subject:

Deep subsoiling is the very thing for *corn*, in any and all kinds of sandy soils. Last year I ploughed around my corn with a small subsoil plough made at my shop, as near like a genuine subsoil plough as I could remember; having never seen but one. It struck my fancy that my sandy lands could be helped with such; and as I had no chance to send for one, had to make them at home. I was very cautious not to allow them to lean either way, as there was danger of cutting the corn roots, and I used them next to the last ploughing I gave my corn before laying by, just as close as they could be run to it, and just as the drought was beginning to do harm. The land is a very light, sandy soil, which my neighbors said was worn out. This was my second crop on it, and I gathered a little the rise of twenty-one bushels measured corn to the acre, besides peas, and what the squirrels ate off it. This looks small by the side of the rich prairie and river bottom lands; but it must be remembered that this is (said to be) "worn-out land," and the first experiment. What satisfies me that the subsoiling is what made my corn is, that one of the very neighbors that ridiculed my "fancy notion," made an entire failure on the same kind of land, where nothing but a lane divides us.

My mode of farming differs from every one in my neighborhood; therefore I am the general laughing-stock for all; but I think the smiles are vanishing, and turning to astonishment and wonder. Last year my farm was visited from several quarters, and it was given up by all that my crops could not be surpassed. . . .

I am a great land for experimenting. I have now nine different kinds of corn, three of cotton, two of oats; and four kinds of manure, viz.: cotton-seed, in a ground-up state; rotten wood and ashes; stable manure and soap-suds; cotton and stable manure, all mixed and well rotted. I apply manure

to all my lands, rich and poor, corn and cotton, throughout; and at the close of the present year, or about harvest time, I will begin to give any that may wish it more of my experience in farming. I do not want to say any thing further until I try these experiments on one more crop.

HORTICULTURAL.

SELECT JUNE ROSES.—In answer to an inquiry from a correspondent, what are the best June roses, taking into view both form and color, the *Albany Cultivator* replies as follows:

Triomphe d'Abbeville, a fine deep red, very double, with a small green centre; *Bonne Genevieve*, a beautiful clear rose, less double, but of handsome form; *La Tourterelle*, a pale purple or dove color, with delicately imbricated petals; *Roi de Prusse* and *London Pride*, light purple, of fine form, and very double, the latter the most so; *General Thiers*, a very dark velvet purple, remarkable for the delicacy of its petals; *Victor Tracy*, of only moderate pretensions as to form, but a remarkably large, richly colored rose, and an uncommonly vigorous grower; *George the Fourth*, very large, dark rich velvet, its only fault being its loose form; and among white roses, *Madame d'Arblay*, *Blanche Fleur*, *Hybrid Blanche* and *Madame Plantier*—*Madame Hardy* is a very fine white rose, but too tender for the north. The old *Crimson Boursalt* or *Maheka*, and the *Boursalt Elegans*, (very often spurious,) are fine for pillars, as are also the *Prairie* roses, the *Baltimore Belle*, *Queen of the Prairies*, *Perpetual Pink*, &c. We should not forget in this list, the old *Blush Moss*, which in some points has never been equalled by any of the new mosses, and *Princess Adelaide*, perhaps the finest grower of all the moss roses, and very fine in other respects.

A REMEDY FOR THE CURCULIO.

THE following experiment was tried by a gentleman in Philadelphia, and published in the *Farmers' Journal*. It coincides with what our readers have seen elsewhere, and describes perhaps the most convenient mode of applying the antidote. If but partially successful, it will amply repay the trial:

Ignorant of the character of the enemy of my fruit, I determined to try an experiment with one of my trees. I accordingly procured a pound of flour of sulphur, and placing a small iron furnace filled with live coals on a high stool, as near to the lower branches as I could with safety, sprinkled the sulphur lightly on the coals. This was early in the morning, while the atmosphere was perfectly calm. As the fumes of the sulphur ascended through the tree, I watched closely for the purpose of ascertaining whether any effect had been produced upon my unknown foe. Scarcely had the vapor risen to the topmost branches, when I observed several round-looking objects falling. Upon examination I found them to be insects which were entire strangers to me. Gathering up two or three of the nearly defunct little creatures, I showed them to a friend somewhat skilled in entomology, who at once pronounced them the dreaded curculio—the scamps that had the preceding year destroyed my plums. Much delighted with the discovery, I immediately renewed the sulphur fumigation, continuing it for more than a week, and

always with success against the foe. The result was most gratifying. The tree which had been fumigated bore me a fair crop of excellent fruit, while on the other scarcely a single plum came to perfection.

This spring the two blossomed profusely. I again caused the sulphur to be applied, and at the period of writing, I am rejoicing in the prospect of a fine crop of plums.

NEW BOOKS.

Up-Country Letters. Edited by Professor B——, National Observatory. Appleton & Co. 18mo, pp. 329.

The author says, p. 85, "You know how apt babies are to be remarkable, but, s'r, perhaps you never saw a baby like this; I presume to say you never did. That it is fair and round-faced, and has a forehead like Daniel Webster's; that it never cries; that it is always 'jolly,' so to speak; these things are something," &c. This book is also a remarkable "something," always "jolly" at least; and though many would prefer more substantial reading, we go with the author, who says, on another page, "Let us love the country, only remembering that towns are, and that thereby we get the morning papers." To read books of this sort at least helps digestion, and hence may be serviceable to about seven eighths of the whole community. "Frank's Log-book," however, is the gem of the volume. The author here wakes up powers before dormant, or at least a little sleepy, and he keeps awake, and keeps his readers awake to the end. The storm and the sea-sickness, "Old Harry himself housed in the pit of the stomach," and the recovery, are all capital. Each of these chapters is worth the price of the book as a specimen of elegant literature.

Beautiful and New Music, published by WILLIAM HALL & SON, Broadway.

The "Gipsy Girl," from Meyerbeer's *Camp of Silesia*, that admirable song by which Jenny Lind secured such unbounded applause, and almost the only one of her songs within reach of an ordinary voice. "Better than Beauty" and "Kitty Neil" are also two pretty songs, by Maeder. "Wallace's Second Grand Polka de Concert," which is as good as the first, which excited so much furor, and sold so extensively. "The Rose-bud Polka," too, by the same eminent author, and much more simple than most of his compositions. "The Old Folks are Gone," Song and Chorus, by C. FRIEDRICH WURZEL. "Early Lost and Early Saved," Words by Dr. BETHUNE, Music by GEORGE F. ROOT. "Maiden, awake from thy Slumbers," by JOHN DANIEL. Here are three gems of great excellence, not at all of the Italian school, but plain, heart-speaking melodies, the first two of which you must not buy if you don't wish an extra crystal drop to shine occasionally on your eye-lashes. But if you have a soul, buy them; and if you have lost—but enough. This is a list of rich compositions.

Les Aventures de Telemaque, Fils d'Ulysse, par Fénelon. With Grammatical and Historical References to Fasquelle's New French Method, and the Explanation of the most difficult Words and Passages. By LOUIS FASQUELLE, LL.D., Professor of Modern Languages in the University of Michigan, &c. New-York: Newman & Ivison. 1852.

The adventures of Telemachus will be used as a text book as long as there is a pupil learning the French language. The story and the style are equally charming. This edition is not behind its predecessors. It is on good paper, in good type, and well bound. Its notes are copious and judicious, and at least all desirable facilities are provided for a ready and accurate translation. As a text book it has one advantage over most others: the lines of each page are numbered.

Bryan on the Human Ear: A Treatise on the Anatomy, Physiology, and Diseases of the Human Ear. By JAMES BRYAN, M.D., Philadelphia. 12mo, pp. 124.

A copy of this little work is on our table. It is admirably executed and amply illustrated. Its style is clear, concise, and methodical. Of its professional merits we

are not qualified to judge. If you would examine it, just transmit a dollar to the address of the author, corner of Tenth and Arch streets, Philadelphia, and you will receive a copy by return of mail, post-paid. The connection of the author with numerous medical institutions of the highest respectability ought to secure for him a respectful attention.

The Academy Vocalist; or Vocal Music arranged for the use of Seminaries, High Schools, Singing Classes, &c. By GEORGE F. ROOT.

The Glee Hive: A collection of Glees and Part Songs, for the use of Musical Conventions, Teachers' Institutes, and Classes of the Boston Academy of Music. By LOWELL MASON and GEORGE J. WEBB.

Cantica Laudis; or the American Book of Church Music. By LOWELL MASON and GEORGE J. WEBB.

These three books from the same publishers, Messrs. Mason & Law, are edited by gentlemen each at the head of his profession in this country. Mr. Root is yet a young man, but he is a thorough musician, of whom we shall yet hear much that is very good. Messrs. Mason and Webb need no introduction from any body in this or any other country.

Meyer's Universum.—Nos. 5 and 6 are quite equal in interest to any of their predecessors. The church of Notre Dame is a fine picture. But does not his proof-reader know the difference between "hallowed" and "hollowed?" When applied to the residence of Washington, at Newburgh, the mistake is more than ludicrous. Every body should buy these numbers.

Elements of Philosophy. By W. H. C. BARTLETT, LL.D., Professor of Natural and Experimental Philosophy in the U. S. Military Academy at West Point. Acoustics and Optics. A. S. Barnes & Co.

Professor Bartlett's books need no encomium. Their reputation is established. None are better. This volume deserves a place by the side of its predecessor on mechanics. It is not so much designed for entire novices, as for those who have made some progress in science.

OUR CORRESPONDENCE.

"PRACTICAL BENEVOLENCE."—*Messrs. Editors:* What system of benevolence has ever been introduced among mankind, in a temporal point of view, which will bear a comparison with that which may be termed *Family* employment, upon an extensive scale, (*profitable, honorable, and constant* employment)?

Such is the character of a work now being introduced into New-York market, through the most unceasing labors ever bestowed upon any one subject (of similar import) of a few *determined* individuals who, in addressing the *SOBER, good sense* of community, subject themselves, by way of a simile, to the appearance of the movement of what is termed "still water!" Yet with a broad, deep current, a solid foundation, and a full exhibition of this *great* work under way, the star of hope will ere long reflect its rays upon the understanding of a virtuous community, and being understood, all doubts and fears as to the most triumphant success (in the end) will be made to vanish like *thin* vapor before the *mid-day sun!*

We allude at once to the introduction

into our midst of the manufacture of what we term "staple boots and shoes," upon a new system, so completely and fully matured as to disappoint the most sanguine expectations of our best friends. Indeed, a single prominent fact, the result of an experiment commenced on the 1st July, 1852, with totally green German hands, in the city of New-York, speaks volumes at a breath in our favor. It is as follows:—Machinery, benches, tools, etc., were provided for the making of 120 pair of kip brogans per day by experienced workmen, under this new system; while with *one* man of full experience and a resolute mind, and the *rest* all *green* hands, as before stated, *EIGHTY* pair of good merchantable men's brogans were made up on the ninth day (in one day!)—a circumstance having no parallel in the history of the shoe business before it!!

No such thing has ever been done before! But when *once* done, it may be *multiplied* by *thousands*. Shall this multiplying principle be applied at once? I hear the ready answer: "Yea, yea!"—"Yea, yea!"—"Good news!"

[The foregoing has reference to a plan of

"practical benevolence" which designs to promote the welfare of the poor laborer, by founding a large establishment for the manufacture of shoes. The company is incorporated, we believe, and it already has its work in progress. A large number of men are employed, and so far the experiment is quite as successful as was anticipated. It is the intention of the gentlemen interested to extend their boundaries almost indefinitely, or at least to limit them only with the conveniences for successful operation.

Some of our readers may regard this as a novel kind of "practical benevolence." It may be so in some respects, but we hold it as a very eminent exhibition of it. It re-

minds us of an entry on our own list of subscribers, among which is that of a "Philanthropic Society" in North Carolina. The true *lover of man* will strive to elevate the community by promoting their physical comfort and their intellectual education, as well as by moral and religious influences. The last, without the others, will always be but partial, and far from permanent, in their good results. But we shall have occasion to refer to this again, and merely add that this sort of association is one of the thousand items which must be attended to in many of our communities, ere the true welfare of the poorer classes will rest on a sure basis.]

EDITORS' JOTTINGS.

NEW-YORK HORTICULTURAL SOCIETY.—The exhibition of vegetables, fruits, flowers, &c., was opened on the 20th ult., and was a great improvement upon that held in the spring. The show of roots is very respectable. Among these specimens, those given by John Brill, Esq., Lorillard Spencer, John Fick, Esq., Robert Renné, Esq., were noticeable. Tomatoes, by A. Henderson; Carolina potatoes, by R. Renné, Esq.; Egg plants, by Wm. Watson, Esq.; Corn, by W. H. Mitchel; Peppers, by John Brill; and Celery, by W. & S. Holden.

Among the fruits, Peaches (Crawford, &c.) by Peter Voorhees, Monroe; Foreign Grapes, by Francis Morris, Throgg's Neck; and Quinces, by Jacob Linley, were very fine. Excellent and numerous specimens of fruit were also exhibited by Parsons & Co., Flushing; Wm. Smith, West Farms; R. V. Benson, Schenectady; James Angus, West Farms; John Brill, Newark; Thos. Hogg & Son, Yorkville; and D. and O. H. Wellington, (apples especially,) Hamptonbury; and Wm. Read.

The flowers were very much more worthy of public exhibition than those at the spring show. The fine Banana tree of P. T. Barnum was the *greatest* curiosity. The *Crinum amabile*, *Acacia pubescens*, *Erica transparens*, *Musa humilis*, *Hedechium gortneriana*, the curious *Araucaria imbricata*, *Yucca variegata*, *Mimosa pubescens*, *Passiflora alata*, a beautiful variety, and last and almost least, but very beautiful, *Mentzelia ornata*, or golden star of California, with its elegant and numerous yellow filaments, were among the more rare species. These were exhibited by Messrs. Hogg & Son, J. & O. A. Jarvis, Geo. H. Prentice, Sam. Munn, Esq., and others. The *Mesembryanthemum triginum* and other flowers, by Lewis Menand, Al-

bany, *Gesneria zebrina*, with its elegant velvet and veined leaf, by Hogg & Son; India rubber tree, by Mr. Bridgeman, 880 Broadway, and a fine lot of *Conifera*, by Mr. Chalmers, gardener to Thomas Richardson, West Farms.

Ornamental designs of considerable beauty were also on the tables; and among these we were especially pleased with an arbor by Wm. Chorlton, Staten Island.

Two forms of garden engines, (of which more hereafter,) by Mark Poole, E. Brooklyn, were exhibited; but we have an impression that the larger form is not his invention. It is very useful and economical. But the smaller pattern pleased us very much, and cannot fail to find purchasers, at a fair price.

We should think a critic would be very apt to say that the ordinary plants of ordinary species seen at the last exhibition had given place, to a considerable extent, to the more uncommon varieties, or those that are more strictly hot-house plants; while there were but few specimens of remarkably superior cultivation, either of plant or flower. There were some very fine plants, but our exhibitions show rather a lack of that superior cultivation which characterizes the exhibitions of some of our sister States.

MADAME ALBONI.—We would again draw attention to this wonderful vocalist. Her voice, as our readers know, ere this, is entirely unlike that of the "divine Jenny," whose power was chiefly in the upper and middle register. There, among all yet heard on our shores, she was peerless. But ALBONI is equally without a rival in the lower octaves. She has wonderful power from the middle of the soprano staff, to an octave and a half below that note. Nor is

her merit confined to this part of the scale. She has a good note of unusual strength, and not wanting in smoothness, for several degrees above the regular staff. Not possessing, however, so unrivalled excellence, except that the cultivation of her voice is uniform throughout its whole extent, the upper notes are not so generally the subject of particular notice. Her voice is as flexible, too, as it is strong and full. Her cadenzas, slides, trills, &c., &c., are perfectly smooth and sweet and graceful. There is nothing abrupt, nothing harsh; but every thing is perfectly finished. She sings, too, with remarkable ease. That large full chest of hers, of rather unusual dimensions, seems to hold the music ready-made, so that she has but to "ope" her mouth, and out there flows, not "a trope," but melody as if from a living fountain.

Sangiovanni is a good vocalist thoroughly cultivated, but does not possess much power, nor does he excel in brilliancy. In a drawing-room or moderately-sized hall his music would be delightful. Rovere is not much to our taste in the concert-room, but would, no doubt, be more successful in comic opera.

Madame Alboni is sustained by a very good orchestra, led by Arditì, who certainly deserves to stand high as a conductor. As a violinist, too, he has a good reputation.

MADAME SONTAG.—This lady has arrived in our city, and her first concert was announced for the 20th ult. But ill-health disqualified her for the effort, and the concert was postponed; and though another evening is appointed, it will be too late for us to give any notice of it in this issue. We expect great things, however, and if we do not find her without a superior, as a soprano, we shall be essentially disappointed. In personal appearance, judging from her portrait, she has the advantage of all who have gone before her. But we are anxious to hear THAT VOICE which has enchanted so many thousands, both in Eastern and Western Europe.

Madame Sontag's excellent private character, in which she is not less distinguished than the Swedish Nightingale, and the remarkable events connected with her history, clothe her with a charm, which is alike delightful and irresistible.

P. S. We have heard Madame Sontag at a rehearsal, and we were not disappointed. She is elegant in person and in manner, and her music must be heard to be appreciated. She has a soul which lights up her face, a smile which acts by sympathy, a voice that speaks for itself, and an execution which no vocalist on our shores has ever excelled.

She will create a *furor* equal to that of the Swedish Nightingale.

CHAPPED TEATS IN COWS.—A writer in the *Prairie Farmer* says:

I have used various liniments, and as many kinds of ointments as can be picked up any where, but none in my experience comes up to the mark like *clean, cold water*. This matchless medicine is not resorted to as it should be in the curing of many diseases, and particularly too much neglected on the teats and bag of the cow. My practice is to take clean, cold water into my milking yard, as much as I do the milk-pail. Every teat, and the lower part of the bag, whether sore or sound, should be washed clean before you commence to draw the milk. The teats are then soft, the cow stands quietly, and no dirt falls into your pail.

If the teats are chapped or sore in any way, as they often are in the spring of the year, sop them in *soft butter* after milking. Your milk is clean, your kicking cow has become gentle, and your patience is not riled.

SOUTHERN FAIRS.—The *Georgia Fair* is to be held at Macon, in October; also, the Cotton-planters' Convention. The *South Carolina Fair* is to be at Charleston, in November, and promises to be a splendid affair. Senator Soulé gives the address. New-Orleans is anticipating an exhibition of manufacturing and agricultural products in February next.

In Baltimore is to be the great COMMERCIAL CONVENTION of all the Southern and Southwestern States, in December next.

SUCCESSION OF WHEAT CROPS IN OREGON.—The following extract of a letter lately received presents a new fact, so far as we know, in the history of vegetation:

"For more than one hundred miles south (of Oregon City I suppose, he means) is one of the richest valleys in the world. It varies from fifteen to forty miles in width. The soil is eminently adapted to wheat. One sowing will produce two crops. After the first crop is gathered, you will discover that as soon as the rains of the fall begin to set in, there shoot up from the old roots innumerable little blades, and in a short time the field looks like newly sown land. The instances are quite common where three crops have been taken from one sowing, the volunteer crops being many times superior to the first one."

AD

A
here
the

One
Two
Thro
One
One
One

A so
The f

Agri
The

BR
cultiv
75 cen
SCH
wore o
Schen
A Th
and V
COL
by S. V
COL
by S. V
excelle
able bo
the co
State i

S

IL

Gayl

The
and rec
St. Lou
beyond
content
Gayl
Lock, t
ditional
recentl

ADVERTISING DEPARTMENT OF THE PLOUGH, THE LOOM, AND THE ANVIL.

Advertisements of a proper character will be inserted according to the rates expressed in the Table herewith subjoined. An Index of the BUSINESS ADVERTISED, and the NAMES OF ADVERTISERS, appears under the Table of Contents on the second page of the cover, thus presenting peculiar inducements to advertisers.

RATES OF ADVERTISING.

Space Occupied.	One Month	Two Months	Three Months	Six Months	One Year.
One square of 12 lines....	\$1 50	\$3 00	\$4 00	\$7 00	\$12 00
Two squares of 24 "	3 00	5 00	7 00	12 00	20 00
Three " of 36 "	4 00	7 00	10 00	15 00	25 00
One fourth of a page.....	5 00	8 00	12 00	20 00	32 00
One half of a page.....	10 00	15 00	20 00	30 00	50 00
One whole page.....	20 00	30 00	40 00	60 00	100 00

A square consists of TWELVE LINES of single width columns. The foregoing table, with these remarks, makes one square.

TO ALL
Agriculturists, Horticulturists, & Florists.
The following valuable Books have just been published by
JOHN P. JEWETT & CO.
17 & 19 CORNHILL,
BOSTON.

BRECK'S BOOK OF FLOWERS, being a complete guide to the cultivation of a Flower Garden; by Joseph Breck, Esq. Price 75 cents.

SCHENCK'S KITCHEN GARDENER'S TEXT BOOK.—A thorough work on the management of the Kitchen Garden; by Peter A. Schenck. Price 50 cents.

A TREATISE ON HOT HOUSES; Their Construction, Heating, and Ventilation; by R. B. Lenchars, Esq. Price \$2.00.

COLE'S AMERICAN VETERINARIAN, or Complete Farrier; by S. W. Cole. Price 50 cents.

COLE'S AMERICAN FRUIT BOOK, or Complete Orchardist; by S. W. Cole. Price 50 cents. 48,000 Copies of Mr. Cole's two excellent books have been already published. The above valuable books are for sale by the principal booksellers throughout the country. 500 Agents wanted to sell the above in every State in the Union. Address, (post paid,) the publishers. jy.tf

Massachusetts Horticultural Seed Store,

38 SCHOOL ST., BOSTON.

AZELL BOWDITCH, PROPRIETOR.

Just received at this well-known establishment, a large assortment of

GARDENING IMPLEMENTS,

Comprising—Shears for trimming hedges, and for trimming trees; Knives of various patterns, for pruning, budding, &c., &c.; Peach Pruners; Flower Scissors, &c., &c.

Also a large assortment of Perennial and Biennial Flower Seeds.

Garden Vases of various styles, Chimney Cans, &c.

Horticultural and Agricultural Books.

Bouquets, Cut-flowers, and fruit furnished at short notice. jy

GREAT BARGAINS IN PIANOS.



PERSONS in want of Pianos are invited to examine our large assortment of instruments, which will be sold or let on the most reasonable terms. The Subscribers are the sole agents for the celebrated Boston houses, Hallett & Allen, A. W. Ladd, Woodward & Brown, and W. P. Emerson. Also in store, a good assortment of New-York Pianos. The great variety from which persons can here select, will enable them to procure a Piano that cannot fail to suit. Persons wishing a good Piano at a low price, will find it advantageous to call and examine. Pianos tuned.

jy.

SAFFORD & BROTHER,

369 Broadway, New-York.



C. J. GAYLER'S

SALAMANDER SAFES.

Depot, No. 90 JOHN STREET, Corner of Gold,

LATE OF 128 WATER STREET, NEW-YORK.

Gayler's Double Flange Salamander Safes possess more security against fire than those of any other maker.

The many severe tests to which they have been subjected, and recently in the great fires at Buffalo, Syracuse, Corning, St. Louis and San Francisco, have proved them to be fire-proof beyond all doubt. In every instance they have preserved their contents uninjured when exposed to fire.

Gayler's Safes are furnished with his improved Detector Lock, the reputation of which is fully established. For additional security against the application of Gunpowder, he has recently introduced his Patent Combination POWDER-

PROOF KEY-HOLE COVER. He has also lately introduced a NEW LOCK, which affords as full security against Pick-locks, False Keys and Gunpowder, as any other American Lock now known, not excepting those exhibited at the WORLD'S FAIR, the price of which is much below that of any other Lock now applied for extra security.

Salamander Safes, of all sizes, suitable for Merchants, Bankers, Jewelers, Lawyers, Dwelling-houses, Steamboats, &c., on hand and for sale as above.



Philadelphia, Wilmington and Baltimore Railroad.

Four Daily Lines between Philadelphia and Baltimore.



FARE \$3.10.—A reduction of 10 cents made to those purchasing tickets at the office.

PHILADELPHIA, WILMINGTON, AND BALTIMORE RAILROAD LINES, at 8.15, 1.45, 3, and 10.15.

On and after Thursday, April 1st, the Mail Lines for Baltimore will leave the Depot, 11th and Market streets, as follows, viz.:

MORNING LINE at 8 1-4 o'clock, daily, except Sunday, through in 5 1-2 hours, stopping at all the regular way stations on the road.

AFTERNOON EXPRESS LINE at 1 3-4 P. M., daily, except Sunday. Through in 4 1-2 hours—stopping only at Chester, Wilmington, Elkton, and Havre de Grace.

NIGHT LINE at 10 1-4 P. M., daily; through in 5 1-2 hours, stops at the principal stations on the Road.

The trains leave Baltimore for Philadelphia, as follows:—Express train at 8 1-2 A. M., and Mail trains at 11 A. M., and 6 1-2 P. M.

NEWCASTLE AND FRENCHTOWN LINE AT 3 P. M. The Steamboat Robert Morris will leave Dock st. Wharf daily, except Sunday, at 3 P. M. This line leaves Baltimore for Philadelphia from Bowly's Wharf at 6 1-2 A. M.

Fare by this Line, . . \$2.50 Forward Deck . . \$1.50

Hudson River Railroad.—New-York to and from Albany and Troy.

REDUCTION OF FARES.—Through Fares \$1.50 between Albany and New-York, on all Trains. On and after Sept. 27th, the Trains will run as follows:—

Going North.

Leave New-York, from the Office, corner Chambers street and College Place, at

6 A. M. Express Train for Albany and Troy, connecting with Western Train, stopping only at Peekskill, Fishkill, Poughkeepsie, Rhinebeck and Hudson. Through in 4 hours, from 31st street.

7 A. M. To Peekskill, stopping at all way stations.

8 A. M. Way Mail Train for Albany and Troy, stopping only at Manhattan, Dobbs' Ferry, Sing Sing, Peekskill, and all Mail Stations North.

9.15 A. M. Passenger and Freight Train to Poughkeepsie, stopping at all Stations.

1 P. M. Way Train for Albany and Troy, stopping at Yonkers, Tarrytown, Peekskill, Cold Spring, Fishkill, New Hamburg, Poughkeepsie, Rhinebeck, Tivoli, Oakhill, Hudson, and Stuyvesant, and connecting with the Express Train leaving Albany at 6.30 for Buffalo.

2 P. M. To Peekskill, stopping at all stations.

4 P. M. Way Train, to Albany and Troy, stopping at Yonkers, Dobbs' Ferry, Dearman, Tarrytown, Sing Sing, Cruger's, Peekskill, Garrison's, Cold Spring, Fishkill, New Hamburg, Poughkeepsie, and all stations north, on signal.

4.30 P. M. To Poughkeepsie, stopping at all way stations.

6 P. M. Express Train for Albany and Troy, stopping only at Peekskill, Fishkill, Poughkeepsie, Rhinebeck, Hudson and Stuyvesant. Through in 4 hours from 31st street, and connecting with Western Trains.

6.15 P. M. To Peekskill, stopping at all way stations.

7.30 P. M. Emigrant and Freight Train for Albany and Troy, stopping at all way stations.

Poughkeepsie to Albany; leave Poughkeepsie at 6.15 A. M., stopping at all way stations.

Going South.

Leave Troy Engine Station at 5.45 A. M., and Albany at 6 A. M. Way Mail Train for New-York, stopping at all stations where there are Mails to be received and delivered.

Leave Troy Engine Station at 6.45 A. M., and Albany at 7 A. M. Express Train for New-York, stopping only at Hudson, Rhinebeck, Poughkeepsie, Fishkill, Cold Spring and Peekskill. Through in 4 hours.

Leave Troy Engine Station at 10.45 A. M., and Albany at 11 A. M. Way Train, stopping at Stuyvesant, Hudson, Oakhill, Tivoli, Barrytown, Rhinebeck, Hyde Park, Poughkeepsie, Fishkill, Cold Spring, Peekskill, Cruger's, Sing Sing, and Dobbs' Ferry.

11.30 A. M. Freight and Passenger Train for New-York, stopping at all stations.

Leave Troy Engine Station at 3.30 P. M., and Albany at 4 P. M. Way Train, stopping at Stuyvesant, Hudson, Oakhill, Tivoli, Barrytown, Rhinebeck, Hyde Park, Poughkeepsie, New Hamburg, Fishkill, Cold Spring, Garrisons', Peekskill, Sing Sing, Tarrytown, and Yonkers.

Leave Albany at 4.30 P. M., for Poughkeepsie only, stopping at all way stations.

Leave Troy Engine Station at 6 P. M., and Albany at 6.15 P. M. Express Train, stopping only at Hudson, Rhinebeck, Poughkeepsie, Fishkill, and Peekskill. Through in 4 hours.

Leave Troy Engine Station at 8.30 P. M., and Albany at 8.45 P. M. Night Mail Train, stopping at all stations on signal.

LEAVE POUGHKEEPSIE FOR NEW-YORK. At 6.45 A. M., stopping at all stations above Peekskill, and at Cruger's, Sing Sing, Tarrytown, Dearman, Dobbs' Ferry, Hastings, Yonkers, and Manhattan.

8.45 P. M., Milk and Freight Train, stopping at all Way Stations.

LEAVE PEEKSKILL FOR NEW-YORK,

At 6.15 and 7 A. M., and 5 P. M., stopping at all way stations. Passengers will procure tickets before entering the cars. Tickets purchased after entering the cars will be 5 cents extra.

GEORGE STARK, Superintendent.

New-York, June 14, 1852.

New-York and Erie Railroad.—Summer Arrangement.

TRAINS run as follows:—Leave New-York from foot of Duane street, daily, as follows:—

1. Day Express Train, at 6 A. M., (Sundays excepted,) for Dunkirk, there connecting without delay, with first class steamers for Cleveland, running in connection with the Express Train for Cincinnati; and with first class steamers for Toledo and Monroe, running in connection with the Michigan Southern Railroad. (Dinner at Deposit, and supper at Hornellsville.) Passengers by this train take the Canandaigua Railroad at Elmira, and arrive at Rochester and Buffalo the same evening.

2. Mail Train at 8 A. M., (Sundays excepted,) stopping at all the stations. This train remains over night at Elmira, and goes on next morning at 7.30, arriving at Dunkirk at 4.55 P. M. (Dinner at Narrowsburgh.)

3. Way Train, at 3 P. M., (Sundays excepted,) for Piermont and Suffern.

4. Way Train, at 4.45 P. M., (Sundays excepted,) for Suffern and Otisville.

5. Evening Express Train, at 6 P. M. for Dunkirk, there connecting with first class steamers for Detroit direct; and also for Erie, Ashtabula, Cleveland, Sandusky, Toledo, and Monroe. On Saturdays this train runs only to Elmira. (Supper at Turner's. Breakfast at Hornellsville.)

6. Emigrant train at 6 P. M., (Sundays excepted,) for Dunkirk.

TRAINS TO NEW-YORK.

1. Day Express Train leaves Dunkirk at 6 A. M., (Sundays excepted,) and arrives in New-York the same evening. Passengers from Buffalo and Rochester take this train at Canandaigua.

2. Way Train leaves Otisville at 6.05 A. M., (Sundays excepted.)

3. Mail Train leaves Elmira at 7.01 A. M., (Sundays excepted,) stopping at all the stations, and arriving in New-York same evening.

4. Mail Train leaves Dunkirk at 10.05 A. M., (Sundays excepted,) stopping at Elmira over night.

5. Accommodation Train leaves Dunkirk at 1.30 P. M., (Saturdays and Sundays excepted.)

6. Evening Express train, leaves Dunkirk at 5 P. M. Passengers from Buffalo and Rochester take this train at Canandaigua at 9.30 P. M.

NEWBURGH BRANCH.

Trains run daily, (Sundays excepted,) as follows:— Leaving Newburgh at 6.05 A. M., and 5.15 P. M. Leave Chester at 7.25 A. M., and 6.20 P. M.

FREIGHT TRAINS.

Freight Trains leave from foot of Duane street, at 6 P. M., for all stations on the road, and for Canandaigua, Rochester, Buffalo, and all the Western States.

CHARLES MINOT, Superintendent.

By
and B
adapted
connect
distanc
Leav
The
Monday
The
Tuesda
This
These
every a
who are
the arri
early th
after b

From
Steambo
at 7 A.
Philade
class lin
from foot
by steam
\$1.50.

AND
At 8 o
Wharf.

Retur
at 8 A.

May 3
Canal st
Accom
(Express
beyond,
A.M., an
in connect
Springfie
EXPRES
ton, Con
burgh as
Bridgepo
Railroad
and at 3.

On an
leave (Su
Row and
Office, co
sixth str
1st, 7
at all the
2d, 10
with the
Springfie
3d, 3
connectin
ping at
intermed
passenge
4th, 3
stopping
5th, 4
at all the
6th, 5
all the u
Pleasant
on signal

1st Tra
stopping

F

Mar. 17.

For Boston, Via Newport and Fall River.

By the splendid and superior steamers **EMPIRE STATE** and **BAY STATE**, of great strength and speed, particularly adapted to the navigation of Long Island Sound, running in connection with the Fall River and Old Colony Railroad, a distance of 53 miles to Boston only.

Leave pier No. 3, North River, near the Battery.

The steamer **BAY STATE**, Captain William Brown, on Mondays, Wednesdays, and Fridays, at 5 o'clock, P. M.

The steamer **EMPIRE STATE**, Captain Benj. Brayton, on Tuesdays, Thursdays, and Saturdays, at 5 o'clock, P. M.

This line is the only one that runs direct from Newport.

These steamers are fitted with commodious state rooms, and every arrangement for the security and comfort of passengers, who are afforded by this route a night's rest on board, and on the arrival at Fall River proceed per railroad, reaching Boston early the following morning; or can remain on board until after breakfast, and leave Fall River at a quarter past 6

o'clock, A. M., by the accommodation train, which arrives in Boston at a quarter before 9 o'clock, A. M.

The rates for passage and the price of state rooms, the same as by the other lines.

A steamboat runs in connection with this line to and from Providence, daily, except Sundays.

Fare from New-York through to Providence, Fall River, or Newport, \$3. To New-Bedford, fare \$3 60.

Freight to Boston is taken at the same rates as by the other regular lines, and forwarded with greater expedition by an Express freight train, which leaves Fall River every morning (Sundays excepted) at 7½ o'clock, for Boston and New-Bedford, arriving at its destination at or about 11, A. M.

For freight or passage, apply on board, or at the office on Pier 3, North River. For state rooms or berths, apply on board; or if it is desired to secure them ahead, application may be made to **TISDALE & BORDEN**, Agents, 70 and 71 West street.

Camden and Amboy Railroad for Philadelphia.

From Pier No. 1, North River, foot of Battery-place, by Steamboat John Potter. Two lines daily. Morning Line leaves at 7 A. M.; Afternoon Express Line at 2 P. M., through to Philadelphia in 4 1-2 hours. Fares: 1st class cars, \$3; 2d class line, by 2 T. M., only \$2. Returning, leave Philadelphia from foot of Walnut st., at 8 A. M., and 2 P. M. Emigrant Line by steamboat Transport, from Pier No. 1, at 5 P. M. Fare, \$1.50.

FROM PHILADELPHIA FOR NEW-YORK,

AND INTERMEDIATE PLACES.—Through in 4½ hours.

At 8 o'clock A. M. and 2 o'clock, P. M., from Walnut street Wharf.

FARE, \$3. Second Class at 8 A. M., only \$2.

Returning, leave New-York from Pier No. 1, North River, at 8 A. M., and 2 P. M.

New-York and New-Haven Railroad.—Summer Arrangement.

May 3, 1852.—Trains out of New-York, leave near corner of Canal street and Broadway.

ACCOMMODATION AND SPECIAL.—At 7 and 11.30 A. M.; 4, (Express to Stamford and Norwalk, and stopping at all stations beyond,) and at 5.30 P. M., through to New-Haven. At 8.50 A. M., and 6.30 P. M., for Port Chester. The 11.30 A. M. runs in connection with train from New-Haven to Hartford and Springfield, and with train over the Canal Road.

EXPRESS TRAINS for New-Haven, Hartford, Springfield, Boston, Connecticut River and Vermont Railroads, to Ogdensburg and Montreal.—At 8 A. M., stopping at Stamford and Bridgeport, connecting with the Housatonic and Naugatuck Railroads at Bridgeport, and Canal Railroad at New-Haven—and at 3.30 P. M., stopping at Stamford, Norwalk, and Bridge-

port, connecting with Housatonic and Naugatuck Railroads at Bridgeport.

TRAINS INTO NEW-YORK.—Accommodation and Special.—At 5.30, 7, and 9.35, A. M., and 4.20 P. M., through from New-Haven. At 5.30 A. M., and 3.45 P. M., from Port Chester. The 9.35 A. M. receives passengers from Springfield and Hartford and Canal Railroads at New-Haven. The 4.20 P. M. receives passengers from Hartford and Springfield Railroads.

EXPRESS TRAINS leave New-Haven on arrival of trains from Boston, at 1.15 and 8.50 P. M., (stopping at Bridgeport, Norwalk, and Stamford;) leaving Boston at 8 A. M., and 3.45 P. M.

See large bill of advertisement at the Station House and principal Hotels.

GEO. W. WHISTLER, Jr.,
Superintendent.

New-York and Harlem Railroad.—Summer Arrangement.

On and after Monday, July 19th, the following trains will leave (Sundays excepted) City Hall Station, corner of Tryon Row and Centre street. Passengers also received at the Ticket Office, corner of Broome street and Bowery, and at Twenty-sixth street; also at the usual stopping places on the street.

1st. 7 30 A. M. Croton Falls Accommodation Train, stopping at all the usual way stations above Fordham.

2d. 10 A. M. Chatham Four Corners Mail Train, connecting with the Western Railroad Trains for Albany and Troy, or Springfield, stopping at all stations north of Fordham.

3d. 3 P. M. Chatham Four Corners Accommodation Train, connecting with Western Railroad Trains for Springfield, stopping at all stations north of White Plains, and on signal at intermediate stations between Fordham and White Plains for passengers going north of Croton Falls station.

4th. 3 30 P. M. White Plains Local Accommodation Train, stopping at all intermediate stations.

5th. 4 30 P. M. Croton Falls Accommodation Train, stopping at all the usual way stations.

6th. 5 30 P. M. Croton Falls Accommodation Train, stopping at all the usual way stations south of White Plains, and at Kensico, Pleasantville, Newcastle, Bedford, Mechanicsville, and Purdy's on signal.

RETURNING.

1st Train, 6 A. M., from Croton Falls, Accommodation Train, stopping at Purdy's, Mechanicsville, Bedford, Newcastle,

Pleasantville, and at Kensico on signal, and at all the way stations south of White Plains.

2d. 7 20 A. M., from Croton Falls, Accommodation Train, stopping at the way stations north of Fordham.

3d. 5 30 A. M., from Chatham Four Corners, stopping at, and the usual stations north of, White Plains; also Tuckahoe and William's Bridge.

4th. 1 15 P. M., from Croton Falls, Accommodation Train, stopping at, and all way stations north of, Harlem.

5th. 12 M., from Chatham Four Corners, in connection with Western Railroad, (East and West,) stopping at, and all intermediate stations north of, Fordham and Morrisania, Mott Haven and Harlem.

6th. 6 30 P. M., from White Plains, Local Accommodation Train, stopping at all intermediate stations.

Other Local Accommodation Trains leave the City Hall Station for William's Bridge at 11 30 A. M., and 6 30 P. M.

For Fordham, 7, 8 30, 9 30, A. M.; 1, 2 30, 5, 8 and 11 P. M.

Returning, leaves William's Bridge at 5 40 A. M., and 1 P. M. Leave Fordham at 5 45, 6 45, 8 30, 9 45 and 11 15 A. M., 2 15, 4 30, 6 30 and 9 15 P. M. Leave Mott Haven and Harlem at 6, 7, 8, 8 45, 10, 11 30 A. M.; 1 20, 2 30, 3 25, 4 45, 5 32, 6 45, 7 30 and 9 30 P. M.

For Sunday arrangement see hand bills.

M. SLOAT,
Superintendent.

FARMER'S BOILERS, OR LAUNDRY KETTLES,

OF ALL SIZES, FOR SALE BY

BARTLETT, BENT & SON,

No. 238 WATER STREET, New-York.

Mar. 17.*

TO PRACTICAL MEN.

Just Published.

NORRIS'S HAND BOOK FOR LOCOMOTIVE ENGINEERS AND MACHINISTS. 12mo. \$1 50.

"Coming from such a source it is a work which we hail as a boon to the Engineering Community."—*Scientific American*.

"With pleasure do we meet with such a work."—*Artisan*.
"The practical knowledge of such men can hardly be over-estimated."—*Balt. Patriot*.

THE ASSAYER'S GUIDE; or Practical Directions to Assayers, Miners and Smelters for the Tests and Assays by heat or wet

processes of the Ores of all the principal Metals, and of Gold and Silver Coins and Alloys. By O. M. LIEBER. 12mo. 75c.

THE PAPER HANGER'S COMPANION. By JAMES ARROW-SMITH. 12mo. 75c.

A TREATISE ON A BOX ON INSTRUMENTS AND THE SLIDE RULE, for the use of GAUGERS, ENGINEERS, SEAMEN AND STUDENTS. By THOMAS KENTISH. Illustrated by numerous engravings. 12mo. \$1.

THE PRACTICAL MODEL CALCULATOR, for MECHANICS, ENGINEERS, NAVAL ARCHITECTS, &c. By OLIVER BYRNE. In one vol. royal 8vo. \$3 50.

HENRY CAREY BAIRD,

SUCCESSOR TO E. L. CAREY,

June, 31.

Scientific Publisher, Philadelphia.

UNION AGRICULTURAL WAREHOUSE AND SEED STORE.

R A L P H & C O.,

Manufacturers and Venders of Agricultural Implements and Machines,
and Dealers in Field and Garden Seeds, Fruit and Ornamental
Trees, Domestic Animals, Fertilizers, &c.,

NO. 23 FULTON ST., NEAR FULTON MARKET, NEW-YORK.

THE Subscribers announce to their friends and the public that they have opened an establishment for the manufacture and sale of articles as above, which they offer at moderate prices.

The principal Implements and Machines are made under their own immediate supervision, by experienced mechanics, from the best materials, and after recently improved models.

The SEED DEPARTMENT embraces all the approved varieties adapted to the field and garden culture of the West Indies, Mexico, and the whole territory of the United States; and the FRUIT and ORNAMENTAL TREES, as well as the DOMESTIC ANIMALS, furnished by us, will be of the choicest kinds, and selected by competent judges.

Among the FERTILIZERS are included the best quality of Peruvian Guano, Plaster, Bone Dust, and Native Phosphate of Lime.

In order to give an idea of our establishment, and to avoid replies to numerous inquiries, we have issued a "Descriptive Catalogue" of about 100 pages, containing the Price List, and

various engravings illustrative of some of the articles we keep on sale, which will be furnished *gratis* to those who may apply for it personally or by mail.

All orders for goods, &c., will be punctually executed, which may be addressed to us, by mail or otherwise, accompanied with the money, or a draft at sight or acceptance on some responsible house in Boston, Philadelphia, or New-York.

The direction may be made in French, German, Spanish, Portuguese, or English, which should be written out in full, in a clear and intelligent manner, in order to avoid mistakes or delays, which might otherwise occur.

Produce on Consignment.—We are prepared to receive and sell on commission all kinds of Agricultural Produce, not immediately perishable; such as grain, seeds, indigo, cochineal, beef, pork, butter, eggs, rice, sugar, molasses, honey, wax, hides, cocoa, tobacco, cotton, wool, hemp, mahogany, &c. &c.

RALPH & CO.

March, 3m.

FOR SALE, IMPROVED SHORT-HORN & ALDERNEY CATTLE,

Of different ages; the greater part of them bred on the farm of Thomas P. Remington, Esq. Many of the Short Horns are descendants of the herd of the late Mr. Bates, of Kirkleavington, England, justly celebrated as one of the best and most scientific breeders of the age. The Alderneys have been bred directly from the best imported Stock. The Cows are unrivalled as rich Milchers. Apply to

AARON CLEMENT, Agent

for the purchase and sale of improved Stock, &c.,

Cedar Street, above Ninth Street, Philadelphia.

Sept. 11.

ANDREWS & JESSUP,

No. 70 PINE STREET, New-York,

COMMISSION MERCHANTS

FOR THE SALE OF ALL KINDS OF

COTTON AND WOOLEN MACHINERY, LEATHER BELTING, &C.; BROKERS IN DYE-WOODS,
DYE-STUFFS AND OILS. ALSO, IMPORTERS AND DEALERS IN EVERY VARIETY OF

MANUFACTURERS' ARTICLES.

Mar. 1y.

J. E. BADEAU,

Designer and Engraver on Wood,

102 NASSAU STREET, Corner Ann, NEW-YORK.

Mar. 3t.

GRAND SALE

OF SUPERIOR THOROUGH-BRED

SHORT-HORN CATTLE.

The subscriber will offer for sale his entire herd of choice Short-Horns, comprising 50 head, young and old, at Public Auction, on Wednesday, the 13th day of October, 1852, at one o'clock P.M., at his farm, 2½ miles from the City of Troy; reserving to himself one bid on five Cows and Heifers, and one Bull, say six head in all, and these to be pointed out previous to the commencement of the sale; this bid will be made public when the six animals are brought to the stand for sale. Should any gentleman advance on the single bid made by the proprietor, the highest bidder will be entitled to the animal. It is proper to say, the severe drought in this vicinity, reducing the hay crop one half, has decided the proprietor to make this sale at the time named, instead of next June, which he had purposed to do.

The well-established reputation of this herd in this Union, and in Canada, and the splendid herd it has measurably sprung from, viz., the famed herd of that eminent English breeder, the late Thomas Bates, Esq., renders it hardly necessary to comment upon its superior merits. It may not, however, be inappropriate to remark, that the establishment of this herd was commenced in 1838, and that the most careful attention has since been paid to its breeding, and that it now contains mostly all the reserved stock of two former public sales. Since 1840, the proprietor has imported from the late Mr. Bates, and his friends and late tenants, the Messrs. Bells, seven head of Short-Horns. And besides these, he has now on the passage across the Atlantic, shipped 21st of June, on board the packet ship "Kossuth," Capt. James B. Bell, a superior yearling roan Bull, having many crosses of the famed Duchess Bulls of Mr. Bates. Including this latter animal, and the beautiful red roan three year old Heifers, which came out from England last September, "Yarm Lass," and "Yorkshire Countess," and the beautiful Heifer Calf of the latter animal, got in England, by the Duchess Bull, "Fifth Duke of York;" there will

be fourteen head of this imported stock, and its immediate descendants. There have been sold from this herd but three Heifers from these importations, and these Cows were sold at \$300 each. All the young Bulls bred from these Cows, except those now offered for sale, have also been sold at private sale, \$300 each, most of them while quite young.

Besides these 14 head of high-bred animals, the noble premium Cow, "Esterville Third," bred by E. P. Prentice, Esq., of Albany, and her equally fine two year old red and white Heifer, bred by me, got by the Bates Bull, "Meteor," and three of the famed Milking Willey Tribe, the same tribe of Cows as the Heifer, "Ruby," sold by me to Mr. S. P. Chapman, of Madison Co., and which Cow was awarded the first premium by the N. Y. State Agricultural Society, for producing the largest quantity of butter in ten days in June, and ten days in August, on grass pasture only, being a fraction over 40 lbs. in those twenty days. There are other valuable tribes in the herd, as the printed catalogue will show.

The catalogue will be ready for distribution about the 1st of August, and will exhibit richness of pedigrees rarely to be met with, showing the descent of the most of the animals, from the best animals on record in the English Herd Book. Having received an invitation from H. Strafford, last winter, to forward a list of the pedigrees of my herd to be inserted in the forthcoming volumes of the English Herd Book, of which Mr. Strafford is now the Editor, several pedigrees were sent to him of the animals here offered for sale, and will appear in said book.

A credit of nine months will be given on all sums up to \$300, and nine and eighteen months on all sums over \$300, for approved paper, with interest, payable at some bank in this State.

Troy, N. Y., July 9th, 1852.

GEO. VAIL.

Aug. 3m.

FRANCIS' PILOSITOUS COMPOUND

Is GUARANTEED to restore the hair in all cases. The conditions are made known in the circular that accompanies each bottle. For a toilet article, to beautify and soften the hair, to remove blotches and pimples from the skin, there is nothing superior. If the proprietor dealt in certificates, he could have had a large collection on hand, but his terms will satisfy every candid person as being perfectly equitable.

Contract prices vary from 20 to 75 dollars. His Perennial

Compound is prepared to restore gray hair to its original color without dyeing, for which the contract price is \$10 per head.

For sale by F. M. CRAKEN, 312 Broadway, New-York, who is the Sole Proprietor and Manufacturer. Price twenty-five cents per bottle, with a liberal discount to dealers. Foster & Makin, 70 Dock street, Philadelphia, A. S. Jordan, 191 Webster street, Boston, are agents, with other respectable Druggists throughout the Union. Dec. 51.

HENRY L. FOSTER,

LATE "BOOTH & FOSTER,"

CLOTHING AT WHOLESALE & RETAIL,

27 Courtland Street, New-York.

Clothing made to order in the best style, and sent to any part of the United States.

FRUIT AND ORNAMENTAL TREES FOR SALE.

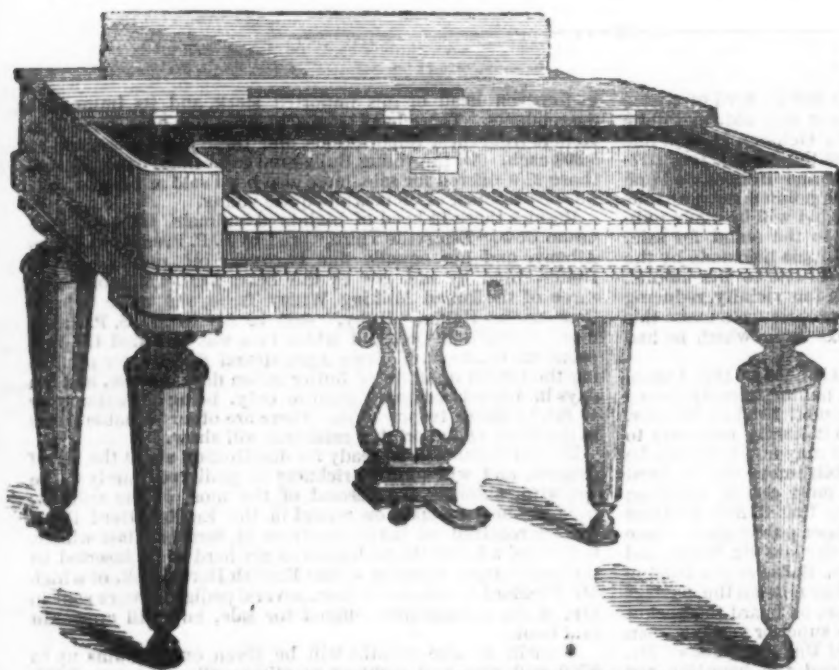
50,000 Peach of one and two years' growth, from the bud; 40,000 Apple; 5,000 Cherries; 5,000 Dwarf Pears—each containing all the most esteemed varieties, and of large size. Also Quinces, Plums, Nectarines, Apricots, Almonds, Grapes, Raspberries, Gooseberries, Currants, Strawberries, &c., &c.

Hightstown, Mercer County, N. J., March, 1852.

50,000 Silver and Ash Leaved Maple Seedling of one year's growth; 50,000 Apple seedlings. They will be sold in large or small quantities, and on the most reasonable terms. Catalogues, with prices annexed, will be sent to all applicants.

ISAAC PULLEN.

PRINCE & CO.'S IMPROVED MELODEON.



This instrument, formerly known as Carhart's Patent, has of late received valuable improvements by the manufacturers, G. A. Prince & Co., and now, as we believe, is recognized as the most perfect in its construction, and in the quality of its tones of any instrument of the kind yet offered to the musical public.

The cases are of rosewood, and as handsomely finished as a piano forte. The key board is precisely the same as the piano or organ, and the tone clear, pure, and round, and in volume equal to a small organ, and by means of a swell may be increased or diminished at the pleasure of the performer.

The key notes respond at the slightest touch, and will admit of the performance of as rapid passages on the piano. One pedal controls the swell, and the other supplies the wind, and works so easily that a child can manage it effectually.

Of these instruments, we understand that from 75 to 80 are made per week by Messrs. Prince & Co., at their manufactory in Buffalo, where they have one hundred and fifty men in constant employ.

For further particulars we refer our readers to Messrs. W. HALL & SON, 239 Broadway, who have lately become sole agents in this city for the sale of the above celebrated instruments.

SEVENTH ANNUAL REPORT OF THE NEW-YORK LIFE INSURANCE COMPANY NO. 106 BROADWAY, MADE IN ACCORDANCE WITH THE PROVISIONS OF THE CHARTER.

Amount of Assets as per statement of Jan., 1851...\$354,755 24

During the year 1851, 1,329 Policies have been issued. The premiums during the same period amounted to.....\$303,074 64
Amount received for interest..... 18,708 08

\$321,782 72

Disbursements.

Amount paid for losses by death, less discount for payments in advance.....\$157,05 16

Amount paid for expenses, viz.:
Salaries, fees to physicians, trustees, clerk hire, &c.,..... 10,122 83

Advertising, office rent, furniture, printing, stationery, &c.,..... 5,062 79

Commissions, postages, medical examinations, exchange, &c., . 37,861 16

Interest on dividends, dividend on subscription notes, re-insurances, &c.,..... 4,657 57

Taxes,..... 3,494 34

Return premiums allowed on cancelled policies,..... 1,534 01

219,786 86

101,995 86

\$456,751 10

Assets.

Invested in United States and New-York State Stocks, in accordance with the charter.....\$185,866 50
Cash on hand..... 26,079 11
Bonds and Mortgages..... 62,577 00
Notes received for 40 per cent. on Life Policies..... 175,016 53
Premiums on Policies in hands of Agents, 7,221 87

Total amount of accumulated Capital.....\$456,751 10

The Board of Trustees have declared a dividend of **FORTY PER CENT.** on Policies for the whole term of Life, and six per cent. interest on former dividends.

The principles of this Company are purely mutual, so as to be the most economical and secure to the members.

Dividends are made annually on all Life Policies in the shape of Stock, bearing interest at 6 per cent., payable in cash.

These Dividends have always been 40 and 50 per cent.; by this mode the annual premiums are regularly reduced from year to year.

On Life Policies, where the premiums amount to \$50, 40 per cent. of it can be paid by note.

Pamphlets, containing full exposition of the principles and mode of operation, can be had gratis at the office of the Company, 106 Broadway, New-York, or at any of its Agencies.

MORRIS FRANKLIN, President.

PLINY FREEMAN, Actuary.

Jan. 31, 1852.

Mar. 3m.

Manhattan Life Insurance Company,

108 Broadway, Cor. Pine Street, N. Y.

CASH Capital \$100,000.



DEPOSITED WITH THE COMPTROLLER OF THE STATE FOR THE SECURITY OF ALL POLICY HOLDERS, exclusive of a large and rapidly augmenting Premium Fund.

Persons insuring with this Company, will be entitled to their pro rata share of the first declared dividend. The rates and principles adopted have stood the test of experience, and must secure, beyond contingency, the object for which Life Insurance is effected,—immediate and permanent aid to the widow and orphan.

A. A. ALVORD, President.

C. Y. WIMPLE, Secretary. N. D. MORGAN, Actuary.

ABRAM DU BOIS, M.D., Medical Examiner, attends at the office daily, from 2 to 3 o'clock P.M.

Prospectuses to be had at the office gratis.

Mar. 3m.

ANDRÉ LEROY,

NURSERYMAN AT ANGERS, FRANCE,

Honorary and Corresponding Member of the principal Horticultural Societies of the United States and Europe, begs leave to inform his friends and all the Nurserymen of the Union in general, that he has made large preparations, and has now on hand a considerable stock of the finest evergreen Seedlings, Roses, Fruits, and Ornamental Trees, &c., most suitable for the American markets. The experiments of several years of putting up large orders for the United States enable him to flatter himself that he has now all the necessary knowledge to give full satisfaction, and to assure the delivery in good order of all the Trees, &c., ordered.

He also begs to inform all Nurserymen who have not already

received the supplement for 1852 to his Catalogue of 1851, that it can be obtained free of any charge at the office of his agent, M. E. BOSSANGE, 138 Pearl Street, New-York, who will also attend to forward all orders sent to him, and to pass through the Custom House and re-ship all goods ordered, without any delay and with the greatest care.

Address M. André Leroy, Angers, France, care of M. Ed. Bossange, 138 Pearl St., New-York.

All agricultural papers please insert the above three times prior to January, and send their bill and a copy of each paper to the undersigned.

Oct. 3t.

DESIGNING

AND



ON WOOD.

Publishers, Stationers, Merchants and others, who require illustrations for advertising or ornamental purposes, are respectfully invited to notice the subscriber's "ENGRAVING ESTABLISHMENT." Specimens of fine and bold work, in every style, always on hand.

All orders will receive immediate attention, and to save delay, please state whether to be finely executed, or for what purpose, and at about what price cut.

Designs arranged in a manner, style and price to suit all purposes. Those in want of illustrations will find it to their advantage to order of

A. H. JOCELYN,

Successor to CHILDS & JOCELYN,
Artists and Engravers on Wood,

No. 64 John Street, New-York.

Oct. 12t.

ELECTROTYPES also taken at the above establishment.

FAIRBANKS' PLATFORM SCALES.

The subscribers keep constantly on hand every variety of these superior Balances, warranted in good faith to be ACCURATE, DURABLE, AND NOT LIABLE TO DERANGEMENT, OR expense for repairs.

FAIRBANKS & CO.,
89 Water Street.

Certificate of the Inspectors of Weights and Measures in New-York.

"We, the undersigned, having had occasion to test the various Platform Scales now in use in the City of New York, are pleased to bear testimony to the superior character of those manufactured by E. & T. FAIRBANKS & CO., St. Johnsbury, Vt., and do cheerfully recommend them to the public as the most perfect Weighing Machines in use.

[M'y-64]

HENRY SWORDS,
ENOCH DEAN,

EDMUND WEEKS,
JOHN S. EARLS,

PETER ESQUIROL,
JOHN W. WHEELER."

HIGHLAND NURSERIES, NEWBURGH, N. Y.

A. SAUL & Co. have the pleasure to announce to their patrons, and the public in general, that their stock of

Fruit and Ornamental Trees, Shrubs, &c.,

which they offer for sale the coming autumn, is of the *very best* quality, and embraces everything in their line that can be procured in the trade.

Dealers and Planters of Trees on a large scale, will be treated with on as liberal terms as can be done by any establishment of reputation in the country. They flatter themselves for correctness of nomenclature of fruits, that their stock is nearly as perfect as can be; having all been propagated on their own grounds, from undoubted sources, under the personal supervision of Mr. SAUL.

They have propagated in large quantities all the leading and standard varieties which are proved to be the best adapted for general cultivation, especially those recommended by the AMERICAN POMOLOGICAL CONGRESS at its several sessions, as well as all novelties, and kinds particularly suited to certain sections and localities of the Union and the Canadas.

Their stock of PEAR TREES is the largest they have ever had to offer for sale, and among the largest in the country, and consists of over 50,000 saleable trees.

Their stock of APPLE TREES is very large, as well as PLUMS, CHERRIES, APRICOTS, PEACHES, NECTARINES, and QUINCES; also Grapevines, Gooseberry, Currant, Raspberry and Strawberry Plants, in great variety, &c., &c.

Also the true PORTUGAL QUINCE, of extra size, in full bearing, at \$1 each.

PEARS ON QUINCE, CHERRY ON MAHALEB, and APPLE ON PARADISE STOCKS, for Pyramids and Dwarfs, for garden culture, and of which there is a choice assortment of the kinds that succeed best on those stocks.

Deciduous and Evergreen Ornamental Trees and Shrubs.

100,000 Deciduous and Evergreen Ornamental Trees, embracing all the well-known kinds suitable for street planting, of extra size; such as Sugar and Silver Maple, Chinese Ailanthus, Horse Chestnut, Catalpa, European and American Ash, Upright Lentiscus Leaved Ash, Upright Gold Barked Ash, Flowering Ash, Three Thorned Acacia, Kentucky Coffee, Silver Abele Tree, American and European Basswood or Linden, American and European Elm in several varieties, &c. Also the more rare and select, as well as well-known kinds suitable for Arboretums, lawn and door-yard planting, &c., such as Deodar and Lebanon Cedars, Araucaria or Chilian Pine, Cryptomeria Japonica, the different varieties of Pines, Firs, Spruces, Yews, Arborvitae, &c.

Weeping Trees.—New Weeping Ash, (*Fraxinus lenticifolia pendula*), the old Weeping Ash, Gold Barked Weeping Ash, Weeping Japanese Sophora, Weeping Elms (of sorts), Umbrella Headed Locust, Weeping Mountain Ash, Weeping Willow, Large Weeping Cherry, Weeping Birch, Weeping Beech, &c., &c., together with every variety of rare Maple, Native and Foreign; Flowering Peach, Almond and Cherry; Chestnuts, Spanish and American; Purple and Copper Beech; Judas Tree, Larch, Gum Tree, Tulip Tree, Osage Orange, Paulownia, Mountain Ash, (American and European,) Magnolias of sorts, with many other things; including some 200 varieties of Shrubs, Vines, Climbing and Garden Roses in great variety, such as Hybrid Perpetuals or Romantantes, Hybrid China, Hybrid Bourbon, Hybrid Damask, Hybrid Provence, Bourbon, Tea, China, Noisette and Prairie Roses; also Herbaceous Plants in great variety, &c., &c.; for which see Catalogue, a new edition of which is just issued, and will be forwarded to all post-paid applicants.

A large quantity of Arborvitae for Screens, and Buckthorn and Osage for Hedge Plants.
Newburgh, Sept. 1, 1852.—1t.

THE
ent in
after l
plate
Asian
analyz
propo
with l
the so
and L
selon
It has
now li
Duo,
oblis
ubsta
in or
The
ers.

This
 Ex
 to b
 ulor
 Str
 iral
 e s
 ef
 , an
 pos
 d p
 ders,
 or W
 ty r
 tic
 a p
 ral
 ts, v
 WI
 CA
 wtu
 fish
 ing
 calcu
 or



BLAKE'S

PATENT

FIRE-PROOF PAINT.

THE original and only genuine article that can be sold without infringing upon my patent. This article, in a few months after being applied, turns into slate or stone, forming a complete enamel or coat of mail over whatever is covered, bidding defiance to fire, weather, or water. It has been found, upon analysis by Dr. J. R. Chilton, of this city, to consist of larger proportions of silica, alumina, protoxide of iron, and magnesia, with lesser of lime and carbon. The transition, therefore, from the soft paint to the hard slate is (in the opinion of Drs. Chilton and Lock) accounted for according to nature's own laws; and the longer it is on, the harder and more permanent it becomes. It has been tested about seven years, and that first applied is now like stone. It has also been tried in several fires in Akron, Ohio, where all the fire insurance companies have since established that they will insure buildings, &c., covered with this substance, at a lower rate of premium than those covered with iron or zinc, considering it a better fire-proof.

The Fair of the American Institute have, for the last three years, awarded to me the highest premiums. Diplomas have

also been presented from the New-York State Fair, and the State Fair of Massachusetts.

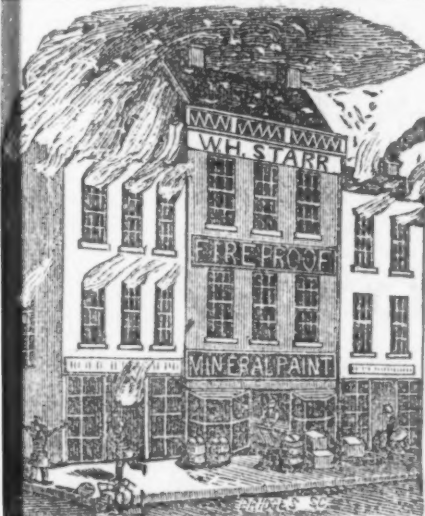
LOOK OUT FOR FRAUD,

As there are scores of unprincipled individuals digging, grinding, and endeavoring to sell all kinds of worthless, counterfeit stuff, calling it fire-proof paint. No one can manufacture and sell the genuine without infringing on my patent, which, having been submitted to referees, and also to the Hon. Daniel Webster, is decided to be good and valid. I have just commenced three suits against different parties, and am determined to prosecute every person who infringes the patent; and those individuals who have given credence to the pirates will soon have an opportunity of defending themselves before a court of justice.

The original and genuine Patent Fire-Proof Paint, either in dry powder, or ground in oil, can at all times be had at the general depot, 84 Pearl st., New-York, from the patentee.

W. BLAKE.

My '52.



THE DREADFUL RAVAGES

OF

FIRE!

MAY MANY TIMES BE ENTIRELY PREVENTED, BY USING

THE

GENUINE OHIO

FIRE-PROOF PAINT.

This invaluable Mineral Paint is one of the most extraordinary mineral products in the West, being very **Economical Expense, Impervious to Water, Indestructible by Fire, and perfectly simple in its application.** For all kinds of Wood, Iron, Tin, Cloth, Brick, Stucco Work, it is the best article ever applied, and most admirably adapted for every purpose where paint of any kind is successfully and cheaply applied.

The efficacy in preserving wood from decay, iron from oxidation, and brick-work and masonry from dampness, is peculiarly positive. Its **incombustibility** is also remarkable, forming a perfect protection to roofs and buildings of wood from burning, sparks, and falling flakes of fire.

For Wood or Brick Cottages, Villas, &c., it cannot be too highly recommended. For MANUFACTORIES, CHURCHES, and PUBLIC BUILDINGS, nothing can exceed it; and for all Railroad purposes, for painting BRIDGES, CARS, DEPOTS, &c., it is invaluable. It is now being used at the West for STEAMERS, with great satisfaction, and will doubtless soon supersede White Lead for that purpose. For COACH, CARRIAGE, CAR, and CABINET MAKERS, it is said to be a perfect desideratum, forming a surface as hard as marble, and receiving as beautiful as porcelain. For all descriptions of outbuildings, fences, and particularly ROOFS, its value can scarcely be over-estimated—changing in a few months from a paint to a marble coating, resisting both fire and moisture. The

natural colors of the paint are *dark drab* and *chocolate*, which, however, if desired, are easily changed to any shade, from a drab to a stone, or dark slate color.

WARRANTED PURE, AND NO INFRINGEMENT,

AS THE FOLLOWING CERTIFICATE WILL FULLY SHOW.

A CARD TO THE PUBLIC.—In my circulars and advertisements, in which I have cautioned the Public against any infringement of my Patent Fire and Water Proof Paint, I had no reference to a Light Colored article, of Different Shades, sold by Mr. W. H. STARR, No. 67 Beekman street, in this city, nor are they intended to interfere with its sale or use.

New-York, June 26, 1849.

WILLIAM BLAKE.

BEWARE OF FRAUDS!

The GENUINE FIRE-PROOF PAINT, *direct from the mines*, can always be obtained, *without delay, warranted pure*, of the subscriber, who has the highest testimonials of its superior valuable qualities; and specimens of the paint applied, of ALL THE VARIOUS SHADES OF COLOR.

All orders for the *Genuine Article*, by the barrel or ton, either dry or ground in oil, will be supplied at REDUCED PRICES, by

W. H. STARR, 67 Beekman Street, N. Y.,

WILDER'S PATENT SALAMANDERS,

WITH RICH'S IMPROVEMENT.

The only Safes with Wild-

R, COMBINED ARE MADE BY

146 Water St.,

The sole Proprietors of Rich's Patent with



er's Patent & Rich's Patent

STEARN'S & MARVIN,

New-York.

tent, and joint Proprietors of Wild-

Silas C. Herring.

THE GREAT FIRE IN CHILLICOTHE, ONE THIRD THE TOWN BURN'T TO ASHES!

CHILLICOTHE, OHIO, Tuesday, April 13th, 1852.

Messrs. STEARN'S & MARVIN—Gentlemen: Yours of the 3th is at hand. In reply, every Safe in the fire, except yours, has proved good for nothing. I lost a large Safe—it was perfectly destroyed; but in the small Salamander I bought from you, nothing was injured.

Your obedient Servant, W. T. CLEMONS.

The above letter shows that in a real hot fire Rich's SALAMANDERS are the only Safes to be depended upon. In the Pearl street fire, eleven Safes, of different makers, were totally destroyed, Rich's Safe alone bidding defiance to the flames, preserving notes, bonds, and mortgages, to the value of \$100,000. The Chillicothe fire is a parallel case—every Safe but Rich's is destroyed. These repeated occurrences prove incontrovertibly that Wilder's Patent Salamander, with Rich's improvement, are the best Safes made in the United States, or in

the whole world. They can be had at the depot, No. 146 Water Street, and at the Factory, corner of St. Mark's Place and Avenue A, New-York. STEARN'S & MARVIN.

ALSO AT THE FOLLOWING AGENCIES:

Isaac Bridge, New Orleans, La.; L. M. Hatch, Charleston, S. C.; Thompson & Oudesluys, Balt., Md.; Holyoake, Lowns & Co., Memphis, Tenn.; Eddy & Morley, Toledo, O.; Allis & Howes, Evansville, Ind.; S. Shephard & Co., Buffalo, N. Y.; Walter K. Marvin, Lockport, N. Y.; Barney Brothers, Mobile, Ala.; Chas. H. Campfield, Savannah, Ga.; Hall and Moses, Columbus, Ga.; DeRosset & Brown, Wilmington, N. C.; W. Randall, St. Paul, M. T.; Morly & Reynolds, Cleveland, O.; Alfred Wright, Roch., N. Y.; J. Hutton, Montreal, Ca.; Starr & Mason, Camden, N. J.; J. H. Westcott, Pittsburg, N. Y.; Ashley Brothers, Ogdensburgh, N. Y.; A. B. Merriam, Oswego, N. Y.; Dana & Co., Utica, N. Y.; Norton, Bradley, & Co., Syracuse, N. Y. 1 yr. * Jy. '52

M. B. BRADY'S

NATIONAL MINIATURE GALLERY,

os. 205 & 207 BROADWAY, corner of Fulton St.,

NEW-YORK.

HUGH CAMERON,

GENERAL AGENT FOR PUBLICATIONS,

THE ART UNION OF PHILADELPHIA,

AND THE MOHAWK VALLEY FIRE INSURANCE COMPANY,

TODD'S BUILDING, PENNSYLVANIA AVENUE,

WASHINGTON, D. C.

B. C. IS ALSO AGENT FOR THE PLOUGH THE LOOM AND THE ANVIL.

t

l.

er
nd

S.
&
&
i
e,
o-
n-
ed
n,
ey
i
se,

9